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A STUDY OF THE RELATIONSHIP BETWEEN STABILITY AND PHYSICAL ABILITY OF ELEMENTARY SCHOOL CHILDREN*

CAROLYN W. BOOKWALTER, Ed.D.

The purpose of this study is to determine what relationships exist between stability (the capacity to endure stimulation[1]) and certain measures of physical ability of elementary school children.

Almost all types of physical education activities are used by Davis in his recreational therapy.[2] According to Snoddy,[3] stability has been found to vary with age and health and properly controlled physical activity builds up the stabilization of the control of emotions by stabilizing the cortex. Such activity gives the organism power to withstand the shocks of stimulation.[4]

Since no other study had compared stability as measured by the Snoddy Stabilimeter and physical ability measures, the present study was undertaken with a view to the possible utilization of the stability measure as one criterion in determining needs for physical education activities of elementary school children and in aiding the guidance of children wtih regard to their general activity program.

It was possible to obtain the data for the Snoddy Stability Test, Brace's Motor Ability Test, Rogers' Strength Index and Physical Fitness Index, and McCloy's Classification Index for boys and for girls in grades three to seven in three of the elementary schools in Bloomington, Ind., and some individual athletic events for boys in the same range of grades. All of these measures are suitable for elementary school children and all, save the latter, have been shown to have high reliabilities.

The Snoddy Stabilimeter is shown in Fig. 1. The base of the instrument, plate glass set into a wood frame, was brushed before the daily use of the apparatus. Three ordinary dry cells supplied the electricity for the apparatus and were tested regularly to make sure that the counter would record accurately. The screen allowed a clear view of the star reflected in the mirror but it prevented the testee from seeing the star by direct vision. Illumination from the small bulb at the top of the mirror was sufficient for the testee to see all portions of the star equally well and care was taken that the light was so shaded as to prevent glare.

Each testee was paced so that the average of one error per second of time was maintained. This pacing was used as the control factor as it makes possible an arithmetic computation of the number of millimeters traced per second of time taken. A thirty second rest was allowed between each of the trials (a trial being one complete tracing around the star). Ten trials were given the first day and a second series of ten trials was given approximately twenty-four hours later.

The directions for the administration of Brace's Motor Ability Test were carefully followed. Pupils were allowed two trials for each stunt and they marked each other as passing or failing after seeing each stunt demonstrated and being told what should constitute a failure of a stunt.

In order to administer Rogers' Strength Index as speedily as possible, stations for measuring the pupils' weight, height, lung capacity, right and left grips, back lift, leg lift, push-ups, and pull-ups were set up in that order with examiners at each station. The examiners were selected from a group of college students familiar with the tests and were individually trained but the investigators checked continually upon the administration of the tests. Women examiners were used for the testing of girls while men and women were used for the testing of the boys.

The scores for seven individual athletic events (60 yard dash, standing broad jump, high jump, running broad jump, basketball throw, playground baseball throw, and chins) were obtained from the physical education class squad cards. Since individual athletic events were not given as part of the physical education program for girls, it was deemed inadvisable to attempt to administer such events to girls.

In measuring for Classification Index, height was taken to the nearest one-half inch without shoes, weight was taken to the nearest one-half pound, and the year and month of age were obtained by inquiry of each child.

The four hundred eighty-one boys and girls tested came from a wide range of homes. The range of parental occupations was from those on relief to those who were owners of stone mills. A number of children of university professors were in attendance at two of the schools.

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* This article is an abstract of a dissertation accepted in partial fulfillment of the requirements for the degree of Doctor of Education in the School of Education of Indiana University, 1940.

[1] Definition by Dr. George S. Snoddy as given in a lecture.

[2] Davis, John E. *Principles and Practices of Recreational Therapy for the Mentally Ill.* Pp. 349-74.

[3] Snoddy, George S. Lecture, November 15, 1936.

[4] Snoddy, George S. "The Nature of Emotional Stability and Its Acquisition Through Physical Education and Recreation."

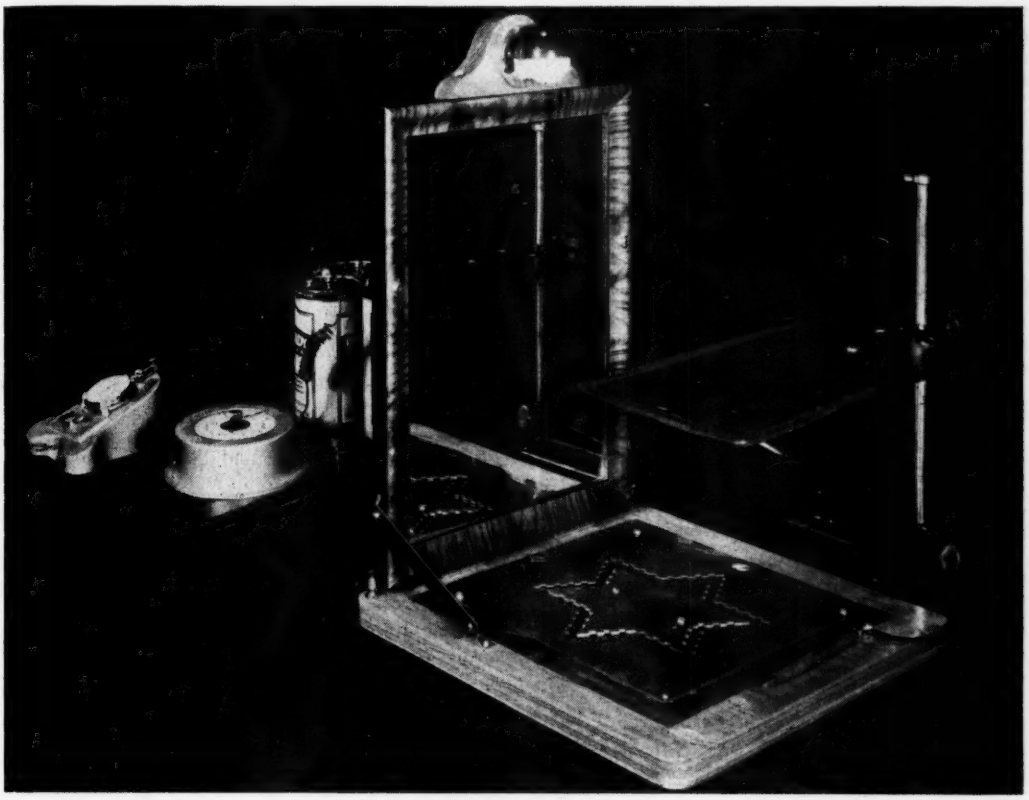

FIG. 1. THE SNODDY STABILIMETER

It is felt that the data are as accurate as it was possible to obtain them. The stability apparatus was checked at regular intervals to see that the batteries, connections, and glass under the brass plate were in good condition. Care was taken to see that the testing situations were well controlled. Dynamometers were checked and the data were corrected for inaccuracies.

The data for Classification Index, Motor Ability Test, Strength Index, and Physical Fitness Index were scored according to the directions given by the authors of each. The seven individual athletic events for boys were T-scored and the sum of the T-scores used as the final score.

The actual scores for the stability measures (time plus errors) for each trial were turned into reciprocal scores so that they would have the same trend as the scores for the physical ability and growth measures, i. e. as one improved, one's scores became larger. The sum of the scores for the first ten trials is called the score for Primary Growth while the sum of the scores for the last ten trials is called the score for Secondary Growth. The average of the two scores is called Average Stability.

During his investigations, Snoddy[5] observed that there seemed to be two different elements in the learning process. One element seemed to appear early in the learning and to show large and stable increments. For convenience, he called the early, stable form Primary Growth and the later, unstable form Secondary Growth. He states that it seems best to regard Primary Growth as being wholly dependent upon interpolated time while the Secondary Growth might be considered as being wholly dependent upon stimulation and the primary base. In other words, there appears to be a stable form of growth underneath a temporary one. His studies indicate that the mirror drawing test as given by him is a measure of stability, i. e. the capacity to endure stimulation.

Since it is not possible to differentiate in score form between the forms of stability as defined by Snoddy, the first day's score was called Primary

[5] Snoddy, G. S. *Evidence for Two Opposed Processes in Mental Growth*, pp. 76-103.

Growth as the data contain more Primary Growth of stability than Secondary Growth. The second day's scores were termed Secondary Growth because these data contain more Secondary Growth than Primary Growth.

Stability Quotient was found by using the Snoddy formula

$$\frac{(V - 2.28)\ 1.1176}{\text{Chronological Age}}$$

in which V stands for the Average Stability score, 2.28 is a constant, 1.1176 is a constant slope of 1 in the stability-age progress curve plus the common error which has been calculated to exist at 0 age, and Chronological Age is the actual age of the individual in years and months.

Because of the difference in the administration of the push-ups and pull-ups in Strength Index, it was decided to keep the scores for the boys and girls separate. This decision was further supported by the findings of another study[6] in which it was discovered that there was a slight difference in stability scores between boys and girls.

To determine the relationship that exists between stability and the physical ability and growth measures of elementary school children, the data were treated as follows:

1. Correlations, linear and curvilinear, were calculated for each of the stability factors of Primary Growth, Secondary Growth, and Average Stability with all of the physical ability measures for boys and girls. From these correlations, the higher, lower, and consistently negative ones were selected and the physical ability measures involved were correlated with Stability Quotient.

2. Correlation devices have not been considered by some people to be the exclusive aids in the solutions of problems which involve individual differences. Modern studies of personality have used studies of the extremes to bring out facts which cannot otherwise be shown because of the variabiliy of a group. This procedure was utilized by a study of quartile groups. The stability factor data were arranged in order from high to low and divided into fourths by count for boys and for girls. The averages of physical ability measures within the stability fourths were then calculated. Critical ratios determined the amount of dependence which could be placed upon the differences of the means within the stability fourths. The process was then reversed for the outstanding physical ability factors—using the stability factors as variables.

3. In addition to the above, the data were divided so as to separate those cases which were below normal, normal, and above normal by weight according to the New Baldwin-Wood Weight-Height-Age Tables. Within each division, the Average Stability average was found.

The results of the treatment of the data by the correlation technique indicate the following:

1. No correlation coefficients or correlation ratios above .507 (ηyx for Strength Index and Average Growth of stability for older boys) were found between the physical ability and stability factors for boys and for girls. All assumptions drawn from the correlation study must therefore be made with this fact in mind. According to the criteria accepted for this study, the correlations are not more than substantial, though in comparison to other studies of correlations between mental and physical characteristics they are high.

2. For Boys: a. There appears to be slightly and consistently more positive relationship between Primary Growth and Arm Strength, Left Grip, Physical Fitness Index, and Strength Index than between the same physical factors and other stability factors (Secondary Growth, Average Growth, and Stability Quotient).

b. The higher correlations are found to be between the Left Grip and Primary Growth ($\eta yx = .474 \pm .040$), Secondary Growth ($\eta xy = .436 \pm .040$), and Average Stability ($\eta yx = .451 \pm .040$).

c. The older boys produce a higher correlation between Strength Index and Average Stability ($r = .276 \pm .065$) than do the younger boys ($r = .103 \pm .067$).

3. For Girls: a. Higher positive correlations are found between Primary Growth and Arm Strength, Left Grip, Right Grip, Leg Lift, Back Lift, Lung Capacity, Strength Index, and weight than between the same physical factors and other stability factors (Secondary Growth, Average Stability, and Stability Quotient).

b. The highest positive correlation is found between Primary Growth and Strength Index ($\eta yx = .411 \pm .040$). Lung Capacity has the highest correlations with Secondary Growth ($\eta yx = .302 \pm .043$) and Average Stability ($\eta xy = .355 \pm .043$).

c. Physical Fitness Index is the only physical ability measure to correlate negatively with Primary Growth, Secondary Growth, and Average Stability. These correlations and correlation ratios range from $-.049 \pm .048$ to $-.302 \pm .043$.

d. The older girls produce a higher correlation ($r = .224 \pm .065$) between Strength Index and Average Stability than do the younger girls ($r = -.050 \pm .067$).

4. A significant difference (C.R. = 4.12), favoring the boys, is found between the correlations, for boys and for girls, of Classification Index and Primary Growth. Real differences, favoring the girls, are found between the correlation ratios for boys and for girls involving Physical Fitness Index and

[6] Peters, Sister Fridianna. *A Comparative Study of Some Measures of Emotional Instability in School Children.* p. 38.

Average Stability (ηyx : C.R. = 4.32, ηxy : C.R. = 4.42).

5. No product-moment correlations involving Stability Quotient, Physical Fitness Index, Motor Ability, and a battery of seven individual athletic events are significant.

6. Increased age seems to accompany increased scores on the stability and physical ability measures for boys and for girls. Partialling age out of the highest correlations involving the stability factors for boys and for girls reveals that age has the least influence upon the correlations between Primary Growth and Left Grip for boys and between Secondary Growth and Lung Capacity for girls. However, in each instance, the correlations in which age is partialled out are lower than the zero-order correlations.

The study of the arithmetic means within the total groups and within quartiles reveals:

1. Boys and girls are found to be significantly different in their average scores on Left Grip (C.R. = 4.48), Right Grip (C.R. = 5.48), Back Lift (C.R. = 17.90), Leg Lift (C.R. = 6.62), Lung Capacity (C.R. = 4.88), and Physical Fitness Index (C.R. = 3.22); the boys being superior in each instance.

2. For girls, the highest quartiles of Primary Growth, Secondary Growth, and Average Stability appear to be slightly inferior to the lowest quartiles in Physical Fitness Index.

3. Real differences between the lowest and highest quartiles, in favor of the highest quartiles, are found between the following means of physical ability measures within stability quartiles:

a. For Boys: Classification Index within Primary Growth (C.R. = 3.33) and Average Stability (C.R. = 4.08); Left Grip within Primary Growth (C.R. = 5.24), Secondary Growth (C.R. = 4.57) and Average Stability (C.R. = 4.94); Lung Capacity within Primary Growth (C.R. = 3.51), Secondary Growth (C.R. = 3.57), and Average Stability (C.R. = 3.77); Leg Lift within Primary Growth (C.R. = 3.66) and Average Stability (C.R. = 4.87); Right Grip within Primary Growth (C.R. = 4.07), Secondary Growth (C.R. = 3.90), and Average Stability (C.R. = 3.99); Strength Index within Primary Growth (C.R. = 3.72), Secondary Growth (C.R. = 4.29), and Average Stability (C.R. = 4.55); and Weight within Primary Growth (C.R. = 3.18).

b. For Girls: Classification Index within Primary Growth (C. R. = 5.16) and Average Stability (C. R. = 4.29: Left Grip within Primary Growth (C. R. = 4.90) and Average Stability (C. R. = 3.48); Back Lift within Primary Growth (C. R. = 3.07); Lung Capacity within Primary Growth (C. R. = 5.10), Secondary Growth (C. R. = 3.61), and Average Stability (C. R. = 4.25); Right Grip within Primary Growth (C. R. = 4.28); Strength Index within Primary Growth (C. R. = 4.45) and Average Stability (C. R. = 3.73); and Weight within Primary Growth (C. R. = 4.57) and Average Stability (C. R. = 3.20).

4. No significant differences in stability are found between the normal weight, under-weight, and over-weight boys. However, girls of normal weight appear to be less stable than either the over-weight (C. R. = 2.01) or the under-weight girls (C. R. = 3.97).

5. Real differences between the lowest and highest quartiles, in favor of the highest quartiles, are found between the following means of stability within physical ability quartiles:

a. For Boys: Primary Growth within Classification Index (C. R. = 4.95) and Strength Index (C. R. = 3.44); Secondary Growth within Classification Index (C. R. = 4.51), Left Grip (C. R. = 3.12), Lung Capacity (C. R. = 3.04), and Strength Index (C. R. = 4.03); Average Stability within Classification Index (C. R. = 4.69), Lung Capacity (C. R. = 3.87), and Strength Index (C. R. = 3.59).

b. For Girls: Primary Growth within Classification Index (C. R. = 3.23), Left Grip (C. R. = 4.38), and Strength Index (C. R. = 4.16); Average Stability within Classification Index (C. R. = 4.24), Left Grip (C. R. = 3.58), and Lung Capacity (C. R. = 3.34).

The findings lead to the following conclusions:

1. There are positive and substantial correlations between Primary Growth, Secondary Growth, and Average Stability and the measures of physical ability for boys, and, there are positive and low correlations between the same factors, except with Physical Fitness Index, for girls. In the latter instance the correlations are negative and low. Positive, but less, relationship continues to exist between measures of stability and physical ability when age is held constant. Primary Growth shows more relationship to the measures of physical ability for boys and for girls than do Secondary Growth and Average Stability.

2. Stability, as measured by the Snoddy Stabilimeter Test, appears to have little relationship to performance in physical activities of skill as measured by the Motor Ability Test and a battery of seven individual athletic events.

3. Physical Fitness Index shows little relationship to stability factors. Physical fitness as measured by the Physical Fitness Index appears to grow less with increasing age.

4. There is evidence from this study that correlations involving physical ability measures of young children are low and that there is a tendency for the relationships with stability factors to improve in the junior high school level. A study of the relationships between stability and physical

ability in the higher school levels should give a more complete picture.

5. That emotional stability as measured by the Snoddy Stabilimeter Test is in part a function of chronological age substantiates the findings of Peters.

6. The findings contradict past observation that under-weight children are more unstable than normal weight or over-weight children—normal-weight girls in this study having been found to be less stable than either the over-weight or the under-weight girls.

7. Boys and girls appear to be significantly different in stability and in similarly administered physical ability measures. Interpreted in light of the Snoddy stability concept, elementary school girls should be given more time than boys to adjust to new situations and they should not be encouraged to participate in over-stimulating activities. Another implication is that girls should be given activities such as will develop them in physical ability.

8. Groups superior in growth and development are also superior in stability as measured in this study. From the findings, it seems logical to conclude that developmental physical education activities for elementary school pupils would contribute to their emotional stability.

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A SUPERINTENDENT VIEWS INTERSCHOLASTIC COMPETITION*

GENERAL PRINCIPLES

1. Athletics are an integral part of the physical education program—that is the most logical part of the education program to which they should be attached.

2. Boys and girls have needs on different levels. This is true in athletics, more so than in the ordinary program.

3. The athletic program should be so arranged as to permit contests between participants having the same degree of ability and experience.

4. Athletics are as much a part of the regular school curriculum as any phase of education.

5. The athletic coach should be credited for actual teaching on the basis of time spent in coaching the various sports. If he teaches (coaches) the equivalent of two periods daily, the balance of his program should be completed in teaching physical education, health education, science, or other school subjects.

6. Athletics are not conducted as completely as they should be from the educational standpoint. They are often conducted largely for raising money and the desire of one community to humiliate another by beating them. As a result, many educational objectives are placed in the background.

7. Forward looking communities will absorb the cost of athletic programs in budgets in the same way as educational materials are made possible. This will include uniforms, rentals of athletic fields, officials, insurance, etc.

8. It is also reasonable to assume that if interscholastic contests are conducted in accordance with educational objectives, the cost of transportation should be included in the school budget.

9. Further implications of this reasoning leads to the point where there is little excuse for charging for admission to contests since the financial or commercial objective is supplanted by educational ones.

Dr. Stoddard pointed out that he was not indicating these principles as existing policies in the

* Excerpts from remarks made extemporaneously by Dr. Alexander J. Stoddard, Superintendent of Public Schools, Philadelphia, Pennsylvania, at a discussion meeting held under the auspices of Phi Epsilon Kappa Fraternity as its contribution to the National Convention of the American Association for Health, Physical Education and Recreation, Atlantic City, N. J., May 2, 1941.

Philadelphia Public Schools, but rather as principles which should guide us in striving for higher and better goals. Furthermore, he made the suggestions not as an authority in the field, but rather as an interested participant.

The following questions were directed to Dr. Stoddard during discussion from the floor.

Question: "Should we, or should we not, have scholastic eligibility?"

Answer: There should be no artificial criteria set up for participation in any part of the educational program. Of course, there should be requirements for participation inherent in each activity such as medical examination, parent's permission, etc.

Question: "Would you put any age limit on participation in athletics?"

Answer: No age limit, but require a close degree of matching of ability of the two groups before they play together.

Question: "Coaches, in some situations, receive higher remuneration than other faculty members. Often, due to the increased remuneration, coaches are put "on the spot" and released because of the poor showing of a team. Other teachers do not have that problem, why should coaches be judged differently?"

Answer: If there were ways of measuring Latin teachers and teachers of other subjects, as obviously as the coaches are measured, they would be "on the spot," too.

Question: "How can we justify athletics if we have no scholastic requirements?"

Answer: If athletics cannot be justified as contributing to the major purposes of education, how can we justify athletics at all?

Question: "Students are required to have certain subjects for graduation. Suppose athletics take so much time that scholastic effort is unsatisfactory?"

Answer: Do not change that; make any athletic endeavor a requirement for graduation, too. There is no other subject in school, provided it is treated as a subject, that can contribute more to educational objectives than athletics.

Question: "Girls are getting athletic competition beyond the control of the public schools. We should like to see athletics brought under the supervision of the public schools. What can we do to bring about this condition?"

Answer: In Philadelphia we have offered to assist principals by going with them, step by step, in incorporating athletic programs as integral parts of the school program. We have suggested that they start by taking a one period step, then a second period step and so on, a little at a time. Administrators want to go as fast as you will go, but, and I do not know why, the biggest handicap in physical education are the people in the field of physical education. However, we will both push and try to make some progress toward the desired program in our day. Here, I think, is the next step: To authorize program makers, principals and so on, to take their dramatics, athletics, debating, all of those areas of education which have been regarded as extra-curricular, and appraise the service in terms of equivalents in instruction. Step number two is to get the Board of Education to take over the most logical equipment expenses. They have taken over the buying of footballs now. Ask them to take another step. Before steps can be taken, you physical educators, not we superintendents, must so work it out that athletics come to be recognized and incorporated as an integral part of the educational program. No one can do it unless you will see that it is done—you will have to do it.

Question: "How do you feel about girls competing in athletics?"

Answer: I am very much for it—provided it is done educationally with proper safeguards. Those provisions are the same for the men and apply in reference to the matter of educational needs, the soundness of relations of competing groups, and so on for other needs.

At the conclusion of the discussion, Dr. Fred Luehring of the University of Pennsylvania commented as follows: "We need the type of thinking that has been evidenced in this meeting to lead athletics out of the bewildering practices current today. We must make athletics a part of the educational program. Lack of understanding of this kind of philosophy has been partially responsible for lack of unity in our program. The contribution made by Dr. Stoddard to the philosophy underlying athletics is one of the best things we have had in a convention."

WHAT THE PUBLIC IS THINKING ABOUT HEALTH

W. W. BAUER, M.D.
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The title suggests that the public actually is thinking about health. There is some room for debate on this question. The probabilities are that the large vague masses of persons, commonly referred to as "the public" are not thinking about health at all unless they are sick or unless they are afraid they are going to be sick, or might be in a position to profit financially or in other ways from thinking about health. On the other hand, they are quite easily stimulated to think about health as evidenced by the popularity of the health appeal in advertising and by the enormous crowds which attend any reasonably well conceived health exhibition at a world's fair, state fair, county fair or medicine show. The very fact that the medicine show, which is probably a fake, can attract as many persons and interest them as deeply as a legitimate health exhibition is evidence that whatever the public may be thinking about health, it does not think in a highly discriminating manner.

Whatever the American people do think about health, they do so as individuals and in response to their individual interests. It is quite inaccurate to say that the American people think most about diet, or most about beauty, or most about heart disease, or most about infant health. We may correctly say that large numbers have certain interests, but we can make no sweeping application to the people as a whole. Each individual is interested in that health problem which at the moment is giving him concern. In the course of a lifetime, this may range from the adolescent's concern about pimples to his ultimate preoccupation with his rheumatism and may in the intervening years accomplish many other interests. In spite of this individualistic attitude, it is nevertheless possible to find a common denominator of health interests among the American people. The observations we set forth are based upon practically ten years' experience with the lay correspondence received and answered by the American Medical Association through its health magazine, *Hygeia,* in response to its radio broadcasts and by reason of the listing of the Association's name in the source lists published in textbooks on health used in the schools. This correspondence indicates two primary trends, one of which may be designated as the normal or composite trend of interest, demonstrated by long term observations of the Bureau of Health Education mail. The other may be designated as the special or short term fluctuations superimposed upon the long term trends.

The long term or composite trend is a response to many stimuli, whereas the short term trends may often be traced to single stimuli. For example, the long term trend represents fundamental human interests in diet, rest, exercise, disease prevention, mental and emotional adjustments, "success" and good appearance. The special interests are reflections of drives, campaigns, or special stimuli, such as wide-spread publicity to such a medical curiosity as the Snite life in an iron lung, an unusual surgical operation, announcement of a new drug, controversy over the significance of rejection figures in the draft, and similar special topics of short-lived, but relatively intense interest. It will be worth while to give a little special consideration to both of these long term and short term trends of preference.

In the long term trend we have many influences represented. Interest may be stimulated by experiences of illness, accident or injury in the life of the correspondent or his family. Approaching marriage may also stimulate interest not only in the immediate sex problems, but in the broad scope of health involved in marriage and questions of heredity to be considered with a view to possible offspring. Bodily deformities ranging all the way from unduly aquiline noses to excessively bowed legs or knock-knees may provide the stimulus for an inquiry. A visit to a physician may raise questions which do not occur to the inquirer until he has left the doctor's office and he then hesitates to go back or to telephone for an answer, so he writes the American Medical Association. Arguments and bets are made as to how many bones there are in the human body, including the head. This results in a great mass and variety of topics and interest represented in our correspondence, but through it all we can see certain definite trends, as indicated by analyses conducted annually of this correspondence. From these trends it is apparent that fundamental biologic interests, long recognized by psychologists, even including the non-Freudians, determine many of the inquiries. These fundamental interests are self-preservation, self-advancement and self-perpetuation through offspring.

Under the heading of self-preservation we may group such questions as those relating to diet, exercise, disease prevention, medical treatment,

accident prevention and first aid. Under the heading of advancement would come inquiries about beauty, emotional adjustments, family and personal relationships, business and social success, and the like. Under the heading of self-perpetuation would come the questions about heredity, marriage, sex, family problems, infant and child health and training.

Out of the intermingling of these interests comes an interesting list of frequencies of subjects on which questions are received. Typical of such a list is the analysis of questions received by mail during 1939.

American Medical Association Correspondence

Food
Skin
Hair
Drugs
Eyes
Sex
Arthritis
Genito-Urinary, Male and Female
Allergy, including Asthma and Hay Fever
Cancer
Colds, Sinuses and Catarrh
Birth Control
Mouth Hygiene
Obesity
Tuberculosis
Venereal Diseases
Mental Hygiene
Maternal Hygiene
Laymen's Medical Theories
Menstruation and Menopause

Returning now to the specialized interest presented sporadically in the correspondence, we find that almost any topic might be included. For a time when it appeared that baldness might possibly be relieved by injection of pituitary hormone, we received a flood of mail on this subject and more recently the use of vitamins to preserve and restore the color of hair in rats has caused many human beings, who would have resented being classified as rats, to take an intense interest in this subject. When the first cod liver oil concentrate was developed in 1928, the American Medical Association had to employ extra help to answer the tens of thousands of inquiries which were received. Of course, a radio broadcast offering a pamphlet or chart for nothing brings in thousands of responses. An exhibit in which a question box is included will almost always influence the thinking of observers, so that the frequency of questions on various topics received from an exhibit is quite different from the frequencies observed in ordinary correspondence. An exceptionally interesting article in a newspaper health column or a widely publicized speech may also bring large numbers of inquiries on that topic.

Following are the subjects in the order of frequency which interested observers of the American Medical Association exhibits at the New York World's Fair, and the Golden Gate International Exposition. In order to interpret these lists and the manner in which they differ from each other and from the general list previously given, it is important to know that the exhibit at the New York World's Fair dealt exclusively with medical education, and the one at the Golden Gate Exposition with medical practice especially on the Pacific Coast. Bearing this in mind it is not surprising that questions about medical education, hospitals, interns, doctors and about nursing education were prominent in the New York World's Fair question box, while questions about general medicine, medical practice, specialties and disease were more prominent at the Pacific Coast Exposition.

New York World's Fair

Medical Education
Heart Diseases
Cancer
Venereal Diseases
Eyes
American Medical Assn.
Acne
Medical Practice Problems
Skin
Allergy
Food
Colds and Sinuses
Anatomy, embryology
Drugs
Maternal Hygiene
Hair
Tuberculosis
Physiology
Teeth and Mouth Hygiene
Menstruation and Menopause

Golden Gate Exposition

Medical Practice
Food
Drugs
Medical Education
American Medical Assn.
Heart Disease
Books and Literature
Obesity
Quacks
Physical Therapy
Ears
Arthritis
Cancer
Skin
Hair
Thyroid
Acne
Female Genitalia
Stomach
Eyes

All this is valuable as well as interesting because it carries us directly back to a fundamental principle of learning, namely, that learning proceeds best out of the immediate interests or needs of the learner. It places renewed emphasis upon what we all know, but seldom practice, that education must be based on the needs of those for whom it is intended, not on the desires or preconceived notions of the teacher. It shows the futility of much of our health teaching whereby we have tried to teach boys and girls about nutri-

tion in an abstract, uninteresting manner, when we could have taught them dynamically through their natural interest in food, its selection, preparation, serving and enjoyment. We have wasted much time in formal instruction on posture before we arrived at the modern conception of teaching posture through dynamics. We have squandered time and educational opportunity upon health rules when we should have been inculcating knowledge of how and why the body functions in everyday living and the application of this knowledge to the wise use of our physiological capacities.

Knowing what the public is thinking about health is important to the American Medical Association because it publishes a health magazine, health pamphlets and posters, and because it broadcasts health programs by radio. Knowing what the teacher's public, namely the school children, is thinking about health is important to the teacher for the same reason. These boys and girls are not thinking of abstractions known as health. They are not much concerned at their age with length of life nor with prevention of ills peculiar to middle and advanced age. They are thinking, as our correspondence definitely shows, of what to do about pimples, how to grow taller if you are a boy, and how not to grow too tall if you are a girl, how to grow thinner or fatter as the case may be, how to look one's best, what to eat, and what about smoking, drinking, kissing and the adventurous excursions into the unchartered mysteries of sex. Unless these needs are met, health education will be flat, dull and unprofitable and no matter how good it may be for those to whom it is offered, they will turn away from it with disdain.

A SAFETY PROGRAM FOR BICYCLE RIDERS

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In the 1890's it was quite the fashionable thing to ride a bicycle. Parties of young people rode out into the country for Sunday picnics. The horse-drawn buggy and the bicycle were the only modes of transportation for pleasure-bound youths. Even the handicap of poor roads did not prevent bicycling from becoming a popular pastime.

With the advent of the automobile all this was changed. The auto could go farther in a shorter time and brought far distant places almost to the back door. The bicycle as a method of transportation disappeared over night. The automobile presented a danger to bicycle riders. A bicycle could keep abreast of the horse and buggy on a public road but the automobile could pass the bicycle with ease. The speed and power of the cars created safety hazards unknown in the "horse and buggy days". Many an adult of 40 years of age who rode a bicycle continuously in his youth has not been on one for years. The joys of riding acquired in younger days have been entirely lost in our fast moving industrial whirl.

For some unknown reason, probably due in part to the promotion by business interests concerned with the manufacture of the bicycle, the riding of bicycles has again become a popular sport in many schools. At the Horace Mann School in New York City tiny tots in the lower grades are furnished with miniature bicycles and instruction in riding is given to them as one phase of their physical education program. A city street is roped off from traffic and the teachers instruct the youngsters in riding. High school bicycle clubs are being formed in the nation's high schools and long trips are being taken out in the country under the supervision of adult direction. Enjoyable and worthwhile physical activity is thus coordinated with nature study, general science and wholesome social relationships. An important phase of the college women's activity program is the bicycle clubs. Men, too, are gradually following the lead of the girls. Co-recreational bicycle clubs are now being formed in high schools and colleges.

Many children are riding bicycles to school. Even in the larger cities the school must now provide parking facilities for hundreds of bicycles that are ridden to school by the students.

This sudden growth of the popularity of bicycle riding along all levels of the public school system has found the school and civic authorities unprepared to successfully cope with the safety problems thus created. In the present day it is more dangerous than ever to ride bicycles on the public thoroughfares.

Scattered over the country are communities that have successfully solved the problem of bicycle control. Cities from Oregon to New York have established various means for aiding not only the

bicycle riders but the motorist who is also vitally affected. Organizations, too, such as the Boy Scouts, have taken steps to solve the local problems. The time has come for the schools, city organizations, and the civic law-makers to cooperate in a program for bicycle safety on the highways.

Varying philosophies are held by different communities as to the proper method of control. In some cities "hard boiled" police departments have taken control and established a system of "Thou Shalt Nots" that are forceful but not educational in nature. Such a system destroys the very purposes for which safety measures should be established. True, accidents are prevented but the tendency is to create a hatred toward law officials which may carry over throughout life. In other places the schools have attempted to develop a system based on a "Do Unto Others" idea that does not have the necessary "teeth" for flagrant offenders. What is most needed is a cooperative, helpful plan which will still have the authority to deal with violators in a necessary way.

What seems to be most needed is; first, wholesome instruction in the schools in bicycle riding; second, instruction in highway laws; third, a mental test given by the schools in knowledges of riding and highway etiquette; fourth, a physical ability test given by the police department in the actual riding of a bicycle; fifth, a city ordinance regulating the control of riding and the registration of bicycles—this should include a driver's license for all riders and a registration of all bicycles; and sixth, the provision for punishment for violators.

Such a system will bring in the police department as a helper to all young people. A child will look upon the policeman as the man who aided him to get his bicycle license. This philosophy is far more healthy than the fear developed in some of the cities at the present time. The main point to be stressed in control of riding is that when violators are apprehended usually it is far more effective, educationally, if the bicycle is punished and not the boy. The impounding of a bicycle for fifteen days is far better education than fining the body five dollars. Fines and even imprisonment no doubt should be included in the city ordinance but these punishments should be used only in rare and serious cases.

A complete bicycle safety program should include:

1. *Instruction in riding in the schools*—There should be a close coordination between the safety instruction and the physical education programs. Knowledges should be presented in the safety instruction classes while the actual riding should be done as a phase of the physical education program. Bicycles should be provided by the school and instruction in riding should be given by competent instructors. The age at which this instruction should be given will vary according to the locality. Instruction might well be started in the fifth and sixth grades but the licensing for riding should not be granted before the junior high school level. The ability to ride might well be acquired at an earlier age but the mature judgment so necessary on the highways probably will not develop before the junior high school age.

2. *Instruction in highway regulations*—This, of necessity, must start the very day the child comes to school. Of course, it has already been started in the home and the school must vigorously continue it until the time the rider gets on the highway with his bicycle, and probably even after this period.

3. *Mental tests by the schools*—This should include a testing of all knowledges necessary for highway operations. Such questions as the following should be included:

a. Upon which side of the highway should one ride?
b. Name the hand signals necessary for a right turn—left turn—a stop.
c. Who has the right-of-way at intersections?
d. Explain the following highway markers. (Here, all highway markers should be pictured.)
e. Is it legal to ride two on a bicycle?
f. May two riders be abreast on the highway or streets?
g. May one ride on sidewalks?
h. What steps are necessary to register a bicycle?
i. What must one do when he sells a bicycle?
j. To whom does one report a stolen bicycle?

A standard must be established for a passing grade.

It is also necessary that questions on the rights of bicycle riders be given to motorists in their examinations for automobile driving. This phase has been sadly neglected in most states.

4. *Physical ability tests*—These should be given by the police department. A sample test is here presented:

a. Ride three times in a circular three foot lane, the inner circle of which is twenty feet in diameter, without touching either of the lines.
b. Ride clockwise twice around this circle using only the right hand on the handlebars.
c. Ride counter-clockwise twice around this circle using only the left hand on the handlebars.
d. Demonstrate three ways of mounting a bicycle.
e. Demonstrate two ways of dismounting.
f. Demonstrate two ways of stopping.

Again, standards must be set for a passing grade. Possibly, all phases should be successfully accomplished. The test should be given once a month and a child should be allowed to attempt the test as often as he desires. Those passing should not be required to repeat the test at any future time.

5. *City ordinance*—A city ordinance to serve as a guide is that of The Dalles, Oregon. This ordinance has been in force since December 1937 and has received enthusiastic support from the town's interested organizations.

SECTION 1. It shall be unlawful for any person to operate or use a bicycle propelled wholly or in part by muscular power upon any of the streets, alleys or public highways of Dalles City without first obtaining from the Police of Dalles City a license therefor.

SECTION 2. The Police are hereby authorized and directed to issue, upon written application, bicycle licenses which shall be for the current year of 1937, to and including the 31st day of December, 1937, and thereafter said licenses shall issue for the current year commencing with the first day of January of each calendar year and ending with the 31st day of December of each year. Said licenses when issued shall entitle the licensee to operate such bicycle for which said license has been issued upon the streets, alleys and public highways, exclusive of sidewalks, in Dalles City except as hereinafter provided.

SECTION 3. Dalles City shall provide each year metallic license plates together with registration cards, said license plates and cards to be issued only to owners possessing a driver's license from the State of Oregon for the operation of motor vehicles or those who have passed a written examination covering the traffic regulations and operation of a bicycle with the percentage of ninety per cent or better in both examinations, said examinations to be given and the registration cards issued by the Chief of Police or assistants designated by him. The metallic license plates and registration cards are to have numbers stamped thereon in numerical order, beginning with number one, indicating the year for which the same are issued and the letters TDBL stamped thereon; such metallic license plates shall be suitable for attachment upon the frames of bicycles, at a place designated by the Police Department and it shall be the duty of the Police Department to attach one such metallic license plate to the frame of each bicycle and to issue a corresponding registration card to the licensee. Such metallic license plate shall remain attached during the existence of such license. The Police Department shall also keep a record of the date of issue and number of such license and to whom issued.

SECTION 4. No person shall ride or operate any bicycles upon any street, alley or public place within the corporate limits of Dalles City during the period from a half hour after sunset to a half hour before sunrise, and all times when fog or other atmospheric conditions render the operation of said bicycle dangerous to traffic or the use of the streets, or at any other time when there is not sufficient light to render clearly discernible any person on the streets a distance of two hundred feet ahead without having a lighted lamp affixed on the front of said bicycle visible under normal atmospheric conditions from a distance of at least three hundred feet in front of said bicycle and also a reflex mirror or lighted lamp on the rear of said bicycle exhibiting a red light visible under like conditions from a distance of at least two hundred feet to the rear of said bicycle.

SECTION 5. All persons engaged in the business of buying second-hand bicycles are hereby required to make report to the Police Department of the purchase giving the name, address and person from whom each bicycle is purchased, the description of each bicycle purchased, the frame number thereof and the number of the metallic license plate found thereon, if any. All persons engaged in the business of selling new or second-hand bicycles are hereby required to make a report to the Police Department giving a list of all sales made, which list shall include the name and address of each person to whom sold, the kind of bicycle sold together with a description and the frame number thereof and the number of the metallic license plate attached thereto, if any. Said reports shall be made within twenty-four hours from the date of the sale.

SECTION 6. It shall be the duty of every person who sells or transfers ownership of any bicycle to report such sale or transfer by returning to the Police Department the registration card issued to such person as licensee thereof, together with the name and address of the person to whom said bicycle was sold or transferred, and such report shall be made within five days of the date of said sale or transfer. It shall be the duty of the purchaser or transferee of such bicycle to apply for a transfer of registration thereof within five days of said sale or transfer.

SECTION 7. All persons who rent, hire or loan bicycles shall first obtain a license tag or tags to be used on such bicycles by paying therefor the regular fee of twenty-five cents per bicycle, which tag or tags shall be attached to the bicycle. Persons requiring such tags may secure the same from the Chief of Police of said City.

SECTION 8. No person shall operate or ride any bicycle upon the streets, alleys or public highways in Dalles City at an undue speed or without due regard for traffic and pedestrians and the general safety and any operation or riding of a bicycle without such due regard for the safety of riders, pedestrians or other traffic, or without regard for

the rules of the road and the traffic ordinances of Dalles City and the motor vehicle laws shall be guilty of reckless driving.

SECTION 9. No person shall operate or ride on any bicycle upon the streets, alleys or public highways in Dalles City with two or more persons thereon, except in case of tandem bicycles or other bicycles specially equipped for two or more riders. It shall be unlawful for two persons to operate and ride upon a bicycle within Dalles City.

SECTION 10. No person, while riding or operating a bicycle on any street, alley or public highway in Dalles City shall hold on to any other vehicle.

SECTION 11. No person shall ride or operate any bicycle on any sidewalk in Dalles City except bicycles used for delivery of papers or merchandise and then only in the residential district of the city when the sidewalk is not being used by pedestrians.

SECTION 12. Every person riding or operating a bicycle on any street, alley or public place in Dalles City shall keep said bicycle on the extreme right of the traffic lane, and it shall be unlawful for two or more operators of bicycles to travel abreast on any street, alley or public place in Dalles City or to operate said bicycles on traffic lanes otherwise than in single file. Every person operating a bicycle upon the streets or alleys of Dalles City on the extreme right of the traffic lane shall have the right of way over other vehicles and all operators of bicycles shall use the required rules of the road for passing and turning at intersections as prescribed by the rules of the road applicable of the operation of motor vehicles.

SECTION 13. Every person riding or operating a bicycle on any street, alley or public place in Dalles City shall be subject to all provisions of the laws of the State of Oregon and the Ordinances of Dalles City applicable to the drivers of vehicles, except the provisions thereof that by their very nature can have no application.

SECTION 14. It shall be unlawful for any person or persons to run or engage or cause to run or to be engaged in any bicycle race on any street, alley or public place within the corporate limits of Dalles City, except under permit from and supervision of the Chief of Police of said City.

SECTION 15. Any person who shall violate any of the provisions of this Ordinance shall upon conviction thereof in the Police Court of Dalles City be punished by a fine of not more than $25.00 or by imprisonment in the City Jail not more than ten days, or by both such fine and imprisonment. The City Recorder may either in lieu of or in addition to such fine and imprisonment, prohibit the operation upon the streets, alleys and public places of Dalles City for a period not to exceed thirty days, of the bicycle so used in such violation, in which event the bicycle so used in such violation shall be impounded with the Chief of Police and retained by him for the period that the operation thereof is prohibited, or the owner's card or certificate shall be held for the period during which the operation of the bicycle is prohibited.

SECTION 16. All ordinances or parts of ordinances in conflict are hereby repealed.

Such a program as is here outlined is becoming increasingly necessary in every town and city in the United States. The bicycle is back. Again we may sing "The Bicycle Built for Two." Sensible steps must be taken to regulate its use.

In the future it might be well for state highway departments to give serious thought to the construction of bicycle paths for riders only. These should parallel the highways but in no sense be a part of them.

A STATISTICAL DEVICE FOR THE MORE ACCURATE VALIDATION OF TESTS

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In conducting research that is concerned with the formulation of a valid test of some motor or intellectual function, the usual procedure is to seek out the most valid criterion obtainable for the measurement of the function and then to correlate against this criterion such test elements as would seem to have some possibility of measuring that quality. The criterion itself is usually too complicated, time-consuming, cumbersome, or subjective to be used as a test by itself. When these correlations have been made, such test items as correlate satisfactorily with the criterion are then intercorrelated, and a multiple regression equation is computed together with the accompanying multiple correlation.

Frequently the weakest link in this chain of processes is the criterion itself; for example, in validating intelligence tests, the criteria used at first were largely the teachers' ratings of intelligence. The average correlation of the tests with the ratings was usually about .40. Later experiments with more objective criteria proved that this low correlation was due more to defects in the criteria than in the tests. In physical education test validation, we frequently are forced to depend for criteria on ratings, or upon objective criteria that are admittedly of not too high reliability. To be more specific, a test to measure anteroposterior posture is usually validated against ratings of experts; but the correlations of the ratings of the alleged experts with each other are usually not higher than .75 — .85. As is well known, validities do not, except by accident, exceed reliabilities. Hence, it is desirable to devise methods of learning the true validities of tests from such variable criteria if this attainment be at all possible.

One method that has been proposed is the so-called *correction for attenuation.* This method correctly assumes that an individual's performance at any one time almost always differs from his "true performance," by which term we mean his average performance over a long period of time or his best performance, under the most favorable circumstances, which will be almost perfectly correlated with his average performance. For purposes of illustration, suppose we were to correlate the achievements in the running high jump taken on Monday with the achievement of the same performers in the sixty-yard yard dash taken on Wednesday. The individuals tested would vary in how they felt, the luck they had in getting a perfect jump at the highest point, and the luck with their starts, as well as in their mastery of techniques and in their native ability. Thus, given performances in the high jump might be written as $X + d$, and performances in the sprint as $Y + e$ where X and Y represent the true abilities, and d and e represent deviations or errors from that true ability. The correction for attenuation utilizes performances on at least two different days, and the best of the formulas proposed is[1]

$$r_{XY}=\sqrt{\frac{r_{X_1Y_2} \cdot r_{X_2Y_1}}{r_{X_1X_2} \cdot r_{Y_1Y_2}}}$$

in which, $r_{X_1Y_2}$ is the correlation between the first variable tested on the first day and the second variable tested on the second day; and $r_{X_2Y_1}$ is the correlation between the first variable tested on the second day and the second variable tested on the first day. In the denominator, $r_{X_1X_2}$ and $r_{Y_1Y_2}$ represent the reliabilities of the two variables. It is essential to the validity of the formula that the random errors attached to these variables be uncorrelated. This assumption is most surely justified when the tests are done on four different days. However, it should be noted that these two tests in the same event *must be given on different days;* though it is quite feasible to have both tests given on *two* different days, or the four applications of the tests may be given on four different days. The results of this correction for attenuation would be approximately the correlation that would have been obtained if both tests had been repeated innumerable times and the averages correlated.

This method has not been used widely in test validation because it assumes that the *test itself* be given contrary to the usual procedure, a large number of times. It does not help very much to know what the validity would be for the average of one hundred applications of the test when, in the practical testing situation, the test will be given once against a criterion given twice. This procedure is, in effect, a correction of the *criterion* for chance errors but not a correction of the test itself. In criteria of somewhat lower validity, such

1 Yule, G. Udney. *Introduction to the Theory of Statistics.* London: Charles Griffin, 1926, 213.

as is true of many of the ratings, this procedure will give a higher—and truer—correlation with the test.

To use this method, administer the criterion twice. This may be done in a number of ways depending on the criterion; for example, suppose we were devising a test for anteroposterior posture, and suppose we had four judges, each of whom rated the posture photographs. The sum of the ratings of two of the judges could be used as one criterion, and the sum of the ratings of the other two as the other criterion. Let us call these sums C_1 and C_2. The actual scores of the test itself we may call T. In the method proposed, the formula would be

$$rCT = \sqrt{\frac{rC_1T \cdot rC_2T}{rC_1C_2}}$$

To give another illustration of a test that may be validated with the same formula, suppose we wish to investigate the validity of the strength index as a measure of one type of athletic performance, such as the track and field type, with high school girls. The strength test would be administered twice, and the total points computed from scoring tables each time. In the numerator of the above formula would be the correlation of the product of the first administration of the track and field events against the strength test and the second administration of the track and field events against the strength test, *the strength test being the same in each case.* In the denominator would be the reliability of the track and field events.

This method seems mathematically sound for use in validating tests, especially those where the criterion is on the borderline of acceptable reliability. It is suggested that, in order to be sure of meeting the assumptions of zero correlation between the random errors of the test and criteria, the three tests be given on *three different days* where the criterion is objective. Where the criterion is a matter of ratings, this fact is unimportant as they are done by different raters—as should be the case—since there may be constant errors of prejudice or opinion in repeated ratings on the same subjects by the same raters.

The application of this formula to test validation does not in any way, of course, lessen the need for the selection of a valid and reliable criterion. Neither does it lessen in any way the necessity for the rigid application of the canons of logic or of common sense to the whole process of formulating the problem. It merely tells us, *if* the problem adequately meets all the standards of sound research procedure, what the real validity of a *single application* of the test should be.

For the benefit of the student of statistical methods of research, the mathematical justification for this formula is given below.

LET C_1 = CRITERION, FIRST APPLICATION
C_2 = CRITERION, SECOND APPLICATION
T = THE TEST (GIVEN BUT ONCE)
C = THE TRUE VALUE OF THE CRITERION SCORES

THEN $C_1 = C + d$
$C_2 = C + \delta$

THEN $r_{C_1T} = \frac{\Sigma C_1 T}{N\sigma_{C_1}\sigma_T} = \frac{\Sigma(C+d)T}{N\sigma_{C_1}\sigma_T} =$

$$\frac{\Sigma CT + \Sigma d\,T}{N\sigma_{C_1}\sigma_T}$$

BUT SINCE $\Sigma d\,T = 0$, BECAUSE d (AND SIMILARLY, δ BELOW) MAY BE ASSUMED TO BE IN THE FORM OF NORMALLY DISTRIBUTED CHANCE DEVIATIONS, BOTH POSITIVE AND NEGATIVE, FROM THE TRUE VALUE OF C, AND HENCE UNCORRELATED WITH T.

IF $r_{dT} = \frac{\Sigma d\,T}{N\sigma_d\sigma_T}$, THEN $\Sigma d\,T = r_{dT}N\sigma_d\sigma_T$

IF $r_{dT} = 0$, THEN $\Sigma d\,T = 0$

$$r_{C_1T} = \frac{\Sigma CT}{N\sigma_{C_1}\sigma_T} \quad \text{---------- (1)}$$

IN LIKE MANNER,

$$r_{C_2T} = \frac{\Sigma CT}{N\sigma_{C_2}\sigma_T} \quad \text{---------- (2)}$$

$$r_{C_1C_2} = \frac{\Sigma(C+d)(C+\delta)}{N\sigma_{C_1}\sigma_{C_2}} =$$

$$\frac{\Sigma C^2 + \Sigma C\delta + \Sigma Cd + \Sigma d\delta}{N\sigma_{C_1}\sigma_{C_2}}$$

BUT SINCE THE LAST THREE TERMS IN THE NUMERATOR EQUAL 0, FOR THE REASON GIVEN ABOVE,

$$r_{C_1C_2} = \frac{\Sigma C^2}{N\sigma_{C_1}\sigma_{C_2}}$$

BUT $\Sigma C^2 = N\sigma_C^2$

$$\therefore\ r_{C_1C_2} = \frac{N\sigma_C^2}{N\sigma_{C_1}\sigma_{C_2}} \quad \text{---------- (3)}$$

$$r_{TT} = \frac{\Sigma T\,T}{N\sigma_T\sigma_T} = \frac{\Sigma T^2}{N\sigma_T\sigma_T} =$$

$$\frac{N\sigma_T^2}{N\sigma_T\sigma_T} = 1 \quad \text{---------- (4)}$$

FROM (1) $\Sigma C\,T = r_{C_1T} N\sigma_{C_1}\sigma_T$ -------(5)

" (2) $\Sigma C\,T = r_{C_2T} N\sigma_{C_2}\sigma_T$ ------(6)

" (3) $N\sigma_C^2 = r_{C_1C_2} N\sigma_{C_1}\sigma_{C_2}$ ------(7)

" (4) $N\sigma_T^2 = r_{TT} N\sigma_T\sigma_T$ --------(8)

FROM (5), (7), & (8), $r_{C_1T} = \dfrac{\Sigma C\,T}{N\sigma_{C_1}\sigma_T} =$

$$\frac{r_{C_1T}\ N\sigma_{C_1}\sigma_T}{\sqrt{r_{C_1C_2} N\sigma_{C_1}\sigma_{C_2}}\sqrt{r_{TT}\ N\sigma_T\sigma_T}} \text{ --------(9)}$$

AND FROM (6), (7) & (8) $r_{CT} = \dfrac{\Sigma C\,T}{N\sigma_{C_1}\sigma_T} =$

$$\frac{r_{C_2T}\ N\sigma_{C_2}\sigma_T}{\sqrt{r_{C_1C_2} N\sigma_{C_1}\sigma_{C_2}}\sqrt{r_{TT}\ N\sigma_T\sigma_T}} \text{ ------(10)}$$

COMBINING (9) & (10)

$$r_{CT}^2 = (9) \cdot (10) = \frac{r_{C_1T} N\sigma_{C_1}\sigma_T \cdot r_{C_2T} N\sigma_{C_2}\sigma_T}{N r_{C_1C_2}\sigma_{C_1}\sigma_{C_2} N r_{TT}\sigma_T\sigma_T}$$

CANCELLING THE TERMS DUPLICATED IN BOTH NUMERATOR AND DENOMINATOR, AND SUBSTITUTING 1 FOR r_{TT} (SEE EQUATION (4)),

$$r_{CT} = \sqrt{\frac{r_{C_1T} \cdot r_{C_2T}}{r_{C_1C_2}}}$$

THE EDUCATIONAL TREND IN PHYSICAL EDUCATION*

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The business man longs for reliability in business. The masses of industrial and office workers who are confused and depressed by the monotony of piece work strive only for social and economic security. The educator does not give much time or thought to the philosophy of either group. He knows that reliability is not nature's way, and that most human pleasures are found through new experiences. It is the accepted responsibility of educators to study the history of progress, be *willing* to use new instruments and methods, be open-minded to new thoughts and always looking for new opportunities to stimulate progress.

A brief review of a few isolated examples of changes of the last century is sufficient to illustrate a need for intelligent ignorance or open-mindedness. Progression even in the sciences of theoretical physics and chemistry has been obvious. For example, at the beginning of the nineteenth century the molecule was the basic unit or element of nature and not unrelated to the fact that biology was only a study of gross anatomy. Even the most popular psychology of that decade, namely, phrenology, was based upon gross anatomy.

A little later Dalton discovered that the molecule was composed of atoms. In biology the science of physiology, which is the study of isolated involuntary activities within living organisms, was made possible through the new developments in theoretical chemistry and physics. Biochemistry was developed. Again progress in psychology was based upon the new developments in biology, and psychoanalysis became the newest and most popular psychology, based primarily upon a knowledge of gland function.

In the early part of the present century Milliken further revealed that the atom wasn't really the smallest element of inorganic nature but that the atom was made up of ions. This finding was important not only to chemistry and physics but also to biology because biologists now talk and write of the bipolar nature of living organisms. They say that the human nervous system is in a sense an electrical mechanism in which the brain is the positive pole and the liver the negative pole.

* Paper presented at the Eastern District Association Meeting of the American Association for Health, Physical Education and Recreation, Boston, April 26, 1940.

In support of the bipolar theory even apples as well as electric eels have been made to illuminate electric bulbs. Consciousness has been measured with a galvanometer. Homing pigeons are found to lose their equilibrium *"instinct"* by the presence of a concentration of strong radio waves. Physicians are studying abnormalities of the human brain with electrical amplifiers which pick up the "broadcasts" from the cerebral cortex. A research worker in California found that this broadcasting of radio electric energy from the cerebral cortex almost stops during sleep.

Founded upon these and earlier findings, we now have physiological psychology which is not only a psychology but also a biological science. This new biological science is obviously dependent upon new developments in physics and chemistry. Furthermore, physicists are not assuming that Coulomb's Law expresses finality in the field of dynamics. Even now, as a result of research with the so-called atom smashers, announcements are being made concerning new laws of nature that transcend Coulomb's Law, but do not supersede it. These new findings may become as important to biological sciences and eventually to educational method as to the science of physics, if educators are only alert enough to follow with adequate and applicable research. However, educational psychology, the foundation for educational method, seems to lag far behind the developments in biology. We might logically ask experts in educational measurement how many decades we must wait before we are to have the results of their examinations of *normal* brains, with the use of the newly developed electrical apparatus. If properly used this new method of examining brains might be a more valid method of determining an I.Q. than is now in use.

It should be especially noted that progress does not necessarily require that old sciences, old subject-matter or old objectives be thrown away or forgotten. New developments may transcend without superseding or taking the place of the old. Anatomy is still an important subject in the physical education teacher training curriclum although physiology has been added. Furthermore, Gestalt psychology now dictates that anatomy be a prerequisite to physiology.

In physical education too many teachers seem to be adopting the philosophy of the average office and factory worker in which desired initiative is lost. This professional group has seemed satisfied in leaning upon anatomy and physiology as their basic sciences with the addition of bacteriology in very meagre doses, which is called general hygiene. Teachers need to know more about the nature of their pupils. Present new sciences give physical educators a chance to understand more about motor skills, the application of curriculum material they are teaching, than is possible for teachers in the more abstruse fields to know about the results of their teaching. Most of the research in educational psychology has been in studies of progress in motor skills, however, physical educators have not given much time to an understanding in the gymnasium and on play fields of the application of findings in educational psychology. The more common practice in training programs is the inclusion of a "shot-gun" course in general psychology or a single course in educational psychology.

It has been just one century since physical education became a part of the contemporary public school curriculum under the leadership of Spiess in Europe. It might be profitable to reflect upon what progress has been made in this period. A hundred years ago the major objective of physical education programs was a military one. The survival of nations was dependent upon the physical strength and endurance of their citizens. Physical education was justified because of its contribution to this need.

With the development of the sciences of physiology and bacteriology during the last half of the nineteenth century there came a new emphasis which was upon individual health, as expressed by an emphasis upon corrective gymnastic programs. If the volume of literature upon the subject in America is a valid index this interest reached its peak here about 1910.

Since 1910 the trend in the thinking of experienced physical educators has been increasingly toward the contribution that physical education may make to the total education of the tides of new school generations. But the emphasis in the training of teachers is still more or less limited to the basic sciences of anatomy, physiology and bacteriology. These subjects do not provide an understanding of educational needs any more than the science of gross anatomy provides an understanding of the learning process. Physiological psychology and other closely related subjects in the humanities should be added to the required teacher training curriculum in physical education. The prerequisite courses should include the present courses in comparative anatomy, human anatomy and physiology.

Physical educators cannot afford to forget the objective of national survival. Neither should they forget the need for individual health in terms of the elimination of defects in the school health program and the development of strength and endurance through an activity program. However, needs are now obvious before us which do not supersede but which do transcend the organic health and muscular strength needs. Mental hygiene is the greatest need of American children and adults. The improvement of mental hygiene should be a major

FROM (1) $\Sigma C\,T = r_{C_1T}\,N\sigma_{C_1}\sigma_T$ ..... (5)

" (2) $\Sigma C\,T = r_{C_2T}\,N\sigma_{C_2}\sigma_T$ ..... (6)

" (3) $N\sigma_C{}^2 = r_{C_1C_2}\,N\sigma_{C_1}\sigma_{C_2}$ ..... (7)

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FROM (5), (7), & (8), $r_{C_1T} = \dfrac{\Sigma C\,T}{N\sigma_{C_1}\sigma_T} =$

$$\frac{r_{C_1T}\,N\sigma_{C_1}\sigma_T}{\sqrt{r_{C_1C_2}N\sigma_{C_1}\sigma_{C_2}}\sqrt{r_{TT}\,N\sigma_T\sigma_T}} \quad \text{..... (9)}$$

AND FROM (6), (7) & (8) $r_{CT} = \dfrac{\Sigma C\,T}{N\sigma_{C_1}\sigma_T} =$

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COMBINING (9) & (10)

$$r_{CT}{}^2 = (9)\cdot(10) = \frac{r_{C_1T}N\sigma_{C_1}\sigma_T \cdot r_{C_2T}N\sigma_{C_2}\sigma_T}{N r_{C_1C_2}\sigma_{C_1}\sigma_{C_2}\,N r_{TT}\sigma_T\sigma_T}$$

CANCELLING THE TERMS DUPLICATED IN BOTH NUMERATOR AND DENOMINATOR, AND SUBSTITUTING 1 FOR r_{TT} (SEE EQUATION (4)),

$$r_{CT} = \sqrt{\frac{r_{C_1T}\cdot r_{C_2T}}{r_{C_1C_2}}}$$

THE EDUCATIONAL TREND IN PHYSICAL EDUCATION*

JOHN M. HARMON, Ed.D.,
Director of Athletics and Physical Activities,
Boston University

The business man longs for reliability in business. The masses of industrial and office workers who are confused and depressed by the monotony of piece work strive only for social and economic security. The educator does not give much time or thought to the philosophy of either group. He knows that reliability is not nature's way, and that most human pleasures are found through new experiences. It is the accepted responsibility of educators to study the history of progress, be *willing* to use new instruments and methods, be open-minded to new thoughts and always looking for new opportunities to stimulate progress.

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Since 1910 the trend in the thinking of experienced physical educators has been increasingly toward the contribution that physical education may make to the total education of the tides of new school generations. But the emphasis in the training of teachers is still more or less limited to the basic sciences of anatomy, physiology and bacteriology. These subjects do not provide an understanding of educational needs any more than the science of gross anatomy provides an understanding of the learning process. Physiological psychology and other closely related subjects in the humanities should be added to the required teacher training curriculum in physical education. The prerequisite courses should include the present courses in comparative anatomy, human anatomy and physiology.

Physical educators cannot afford to forget the objective of national survival. Neither should they forget the need for individual health in terms of the elimination of defects in the school health program and the development of strength and endurance through an activity program. However, needs are now obvious before us which do not supersede but which do transcend the organic health and muscular strength needs. Mental hygiene is the greatest need of American children and adults. The improvement of mental hygiene should be a major

objective in physical education programs because physical education has unique potentialities for service in this direction. This objective can be attained through a program which will at the same time contribute most effectively to the organic health needs of all pupils.

The major human problems of today are psychological in nature as attested to by the fact that more hospital beds are occupied in America by cases of neurological or nervous breakdown than by cases of organic disorders. This in spite of the fact that our modern traffic hazards alone are more destructive than wars of previous generations. One statistician has reported that present trends indicate that in two hundred years we will all be crazy. These and other reports suggest the magnitude of the mental hygiene problems that confront us.

The academic school program is not contributing to the solution of these problems in mental hygiene but in some methods is adding to them. For example, general education administrators have for decades been emphasizing high and higher academic or scholarships standards. This is good even though it is a viciously competitive process. Evolution or progress comes about by a survival of the fittest. However, the mental hygiene of even the strongest mental giants is in danger when high scholarship standards are attained at the sacrifice of physical education needs. A recent report from the Harvard student health department indicates very satisfactory progress in recent years in the elimination of organic defects but in terms of the report there is an increase in nervous disorders. At Boston University it was only recently that a psychiatrist was added to the student health clinic staff. In one semester his voluntary patients numbered twenty-one, three of whom were advised to withdraw from school during the semester.

One service of physical education toward the needs in mental hygiene was indicated by Dr. G. T. W. Patrick, the philosopher, in 1916. His relaxation theory of play is being proven to have been just as true to nature as was Newton's theory of gravity in 1665. Both are just as reliable today as at the time of their conception. Neurologists have proven that the nervous system is a gradient. In terms of genetic psychology this means that the high pressure mental activities of today, including the study of students, are centered in the frontal lobe as suggested by Patrick. All new skills in every art are centered in the motor area of the mid-brain and are what are usually called play activities. All motor skills are racially much older than the functions of discriminating, reasoning or worrying which are centered in the frontal lobe. The racially old skills or large muscle activities are those skills least difficult to master in comparison with more artistic or difficult coordinations and the center of control may be shifted to the cerebellum at which time they become semi-conscious reactions or habits, while the more difficult or genetically newer skills may never become habits. Therefore, it becomes obvious that complete relaxation from conscious activities centered in the frontal lobe is dependent upon conscious activities centered in the mid-brain and not upon the repetition of habits centered in the cerebellum. For example, adults may worry about the administrative problems outlined in the office, or the misfortunes of unemployment, while at the same time develop strength and endurance, or stimulate an appetite by repeating habits such as walking, running or doing setting-up exercises. This fact was overlooked by physical educators for many decades, during which time it was most impossible to show parents that the daily chores were not the best possible physical education program. "The New Physical Education" by Wood and Cassidy and the many contributions of Dr. Williams which may be summarized as "the natural program" has been the core of the trend during the last twenty years toward education through physical education.

The relaxation philosophy suggested by Patrick and proven by more recent contributions of science to be true is important and should be thoroughly understood by physical educators, however, it is not a complete foundation upon which to base a mental hygiene program in physical education. Observations and research in educational psychology suggest an additional theory of play, not one that supersedes the relaxation theory but one that transcends it while at the same time denies the multitude of instinctive theories of play which developed during the nineteenth century. Genetics has shown that evolution has been in terms of an increasing capacity to learn and not in terms of an inheritance of more complicated skills. For example, the human babe is more helpless than the new born of any lower animal but has an almost unlimited capacity to improve its environment. In evolution this improved capacity to learn seems to be perfectly correlated with an increasing capacity to enjoy life or to feel the thrill of new skills or other new experiences. Mankind excels only in the sense of feeling. Various lower animals or birds excel man in auditory, visual, gustatory or olfactory perception. It is further observed that pleasure in physical activity is dependent upon the relative newness of the activity. In other words the learning process is responsible for the pleasure of the activity. When an activity or game is mastered it then becomes work as is the repetition of habits. Therefore, it may logically be concluded that the activity we call play is due to the learning process or that *play is learning*. This conclusion suggests why the same activity is play to one and work to another, why play has been considered the activity of children and work the activity of adults. All activities are comparatively new to the child while many adults have become slaves to a comparatively few rigid habits. This hypothesis suggests that the

interests of boys and girls in gymnasium activities are determined primarily by the relative progress in learning skills and not in the degree of efficiency or an inherited affinity for a particular game.

Philosophers have observed this phenomena of nature as attested to by such statements as these: "If I held truth captive I would release it in order to pursue it again." "We never grow too old to learn but we do grow old when we quit learning." "Education is not a preparation for life but living a life." etc.

The major social needs of today are also psychological in nature. The drudgery of piece work in the office and factory and the monotony of the unemployed in loafing is rapidly creating demands for leisure time activities of a nature which can be satisfied only through a comprehensive program of physical education. Reading clubs, travel and commercial amusements can only add to the inactivity of the mid-brain and the consequent decadence with further over-working of the frontal lobe and more neurological breakdowns. Frontier days and activities cannot return but a program of teaching and learning of motor skills can adequately take its place. In such a program physical education becomes an art productive of mental hygiene rather than an exercise program productive only of callouses, monotony and an appetite for food.

In this comprehensive program, floor drill, calisthentics, the dance, heavy and light apparatus, mass games and athletic games will all be found, but only as curriculum content to be learned and not as a major disciplinary procedure as has most commonly been true of calisthentics and some major sports techniques. In school programs an environment should prevail in which the boy or girl feels perfectly free to turn from a sport that has been mastered to one that is a new challenge, at any time he or she loses the spirit of "sport for sports sake." A desire for organic health upon the part of adults is often responsible for habits of daily setting-up exercises while a desire for social approval drives many boys on in major college sports after the game has become work. Fun at play and social approval could both be realized with more satisfaction or mental health to the participants by turning to new activities to be mastered.

In conclusion, it may be said, first, that the generations we now serve include large groups of economically underprivileged and *under* stimulated. We also have large groups of those who are pampered by the innovative luxuries of travel and commercial amusements and these are greatly *over* stimulated people. For the first class physical education and recreation can be made a release from drudgery and monotony. For the second group physical education and recreation can be made a satisfying and disciplining governor. Second, the progress of physical education in the future will be measured in terms of its contribution to the solution of these major neurological, social and psychological human problems. Third, the teacher training curricula needs to be expanded to better train teachers to meet the challenges and opportunities for service that await them.

A MODERN METHOD OF TEACHING SPORTS AND GAMES

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The following general approach to a method of teaching is based upon a composite system secured from various theories of the learning process. These theories of learning are themselves derived from certain elements of a number of premises from the fields of biology and psychology. The chief sources are best exemplified by:

1. The purposivism portions of McDougall's and Dewey's psychologies.
2. Part of the conditioned reflex theory of J. B. Watson and Pavlov.
3. The laws of readiness, exercise, effect and conduction unit set of Thorndike. This considers only the general essence and eliminates the specific-bond theory.
4. The comprehension by wholes, relationship, insight, and purposiveness of the Gestalt psychology proponents.
5. The idea of basic drives to fulfill essential needs from the psychoanalytic schools, including Freud, Adler, and Jung, (and)
6. The conception of a total-organism-reaction as being normal, from Cannon, Lashley, Child, Herrick, Franz, Sherrington, and others.

By fusing the compatible parts of these into a unity, the writer proposes the following general pattern of learning:

An individual is continually learning in every activity in which he engages. He tends to learn more and retain these learnings longer for future use as the reactions which result from his attempt to adjust are active responses and succeed in fulfilling the need which precipitated the activity. These are accepted for future use to the extent that they have meaning for him. Moreover, these learnings are of greater significance to the indi-

vidual as he perceives their place in the larger pattern of life.

A more extensive development of this theory would include, as a general premise, that purpose has a very definite place throughout. These detailed parts that follow are only an attempt to explain a very general interrelated process that is only artificially divided for our present purposes of analysis.

1. A human being is continually having a number of tensions of varying degrees. These tensions are set up within the individual and from without, in the environment. Certain of these tensions become of such intensity that the person seeks a restoration of ease or balance. (Not necessarily the same level of equilibrium.)
2. In seeking this restoration, the individual normally formulates a solution or organizes a general purpose towards accomplishing this equilibrium.
3. In seeking to fulfill this purpose he may find certain present and future possibilities.
4. He chooses certain of these possibilities on the basis of satisfactory residues of his past experiences and these are used as they are in closeness of relationship between (1) his basic attitude, or general pattern of life and (2) the solution of the immediate goal.
5. He tries this possibility and if it results in restoring a degree of satisfaction, the individual accepts it and he is to that extent changed. If this trial is unsatisfactory, he is annoyed. Satisfaction is also influenced as the activity helps to make each individual feel that he has intimately or personally shared or helped to create the solution of the problem.
6. As he accepts this solution, he tends to retain a generalized pattern of reaction for future use. Complete acceptance assumes that the solution is satisfying to the whole individual makeup. In the future, when identical elements are seen within this generalization which are useful to solving an immediate problem situation, these similar elements are again used.
7. If this act is satisfying in itself, or continues to solve similar problems, the individual persists in practicing it, particularly as he sees further progress taking place or finds satisfaction or fulfillment of a need.
8. There are many associated learnings. To simplify the process we may say that there are two main ones: (1) A primary or direct learning concerned with the elements of the actual action; and (2) a secondary related group of feelings or emotions. In many cases these associations are actually even more important as far as future choices are concerned.

This simplified theory of learning has certain systematic difficulties when attempting an explanation of abnormal states. For instance, it does not explain without a great deal of further elaboration, the actions of individuals who continually seek upsets, that is, people who are continually pugnacious or aggressive toward others, and thus bring more problems to themselves. It also gives no explanation of people who continually inflict pain upon themselves or others, nor does it attempt to interpret dreams, nervousness, or insanity.

An illustration of the above theory of learning, as it applies to artificially set up school tasks could well be the following example—A pupil is assigned certain books to read. He reads them so that he may pass a future test. He reads for a word-form examination and fails to comprehend or accept any suggested ways of meeting meaningful life problems. They meet no recognized personal need except to relieve pressure imposed by authority which does not reward success with basic necessities, and therefore, they have little or no individual significance. He reads them, learns certain facts which are set by those in charge, to pass the examination. He thus reduces the tension or immediate problem by acting in accordance with the ruling of authority. The student has learned solely in order to avoid some form of greater discomfort. The primary learnings in this instance are certain details in the book. Most of these details are forgotten (at least are beyond recall) as the test is finished, but—the associated learnings also remain as part of a residue and thus a generalization takes place in which he sees the reading of books of similar nature as distasteful.

Another example of another variety—The child is restrained by being made to sit in a seat in a classroom. He is released to the greater freedom of the playground. The group is interested in a certain game. The game meets some need of the moment or it offers some form of pleasurable release. To play within the unique structure of the game he accommodates and associates his action to the conduct accepted by the others. This reciprocal influence makes the game possible and he accepts the rules as a part of the situation which makes possible this pleasurable activity. His primary learnings are that he learns the game and the techniques involved. His associated learnings are respect for the individuals as he generalizes the necessity of cooperating with them in similar situations.

A method of utilizing this general theory for teaching the game of tennis, as an example, might be as follows:

Instructional Procedures

1. Attempt to get the individual to gain a complete picture of the whole game by showing

either moving pictures or by taking him to an actual match of excellent players.

2. Describe briefly some of the interesting personalities and give an overview of the place of tennis in the past, present-day life, and in the possible future. Relate this to the individual lives of students.
3. Allow the individual *to attempt to play the game* or at least to attempt to bat the ball back and forth over the net. After he has found his skill insufficient for expert performance, show good form of strokes, footwork, and timing, either through movies or through actual demonstration.
4. Help the pupil himself to better approximate these movements in his own manner by throwing a ball to him and allowing him to return it over the net. (All through this procedure, as he asks questions and finds need for certain instruction, that is, grip, stroking, etc., these could be taught to him.)
5. Have someone on the other side of the net hit the ball to this individual, and next, let both players volley back and forth to acquire further skill. Quietly correct the individual on any major errors in his game after a short playing time. For instance, if he does not hold the racquet far enough back in the stroke, he could be helped by showing the advantage of doing this correctly; but this must be accomplished in a constructive and encouraging manner.
6. Further detailed analysis, as the individual saw need for it, would show the various details of racquet grip, foot position, the shifting of body weight, court position, the use of the other hand and arm as a counterbalance, and the follow through, etc. In other words, *the whole instructional process would be from the broadest possible totality, to details as the individual saw and felt the need for the elements which made up the total game.*
7. Through informal discussion and through suggestions, try to secure mutually agreed upon generalizations about the solution of life problems which are similar to the game itself.
8. Teach with enthusiasm, play the game with students, and have the whole situation at all times enjoyable and surrounded with the spirit of good sportsmanship, friendship, mutual helpfulness and the best competitive possibilities.
9. See that equipment and facilities are all in best possible shape. Encourage students to help construct and maintain them.
10. Have better performers help teach so that they share a feeling of helpfulness. The less skillful may help more with facilities or by reporting on readings or matches.
11. Do not ridicule or discourage poorer players, but give them more help and encouragement than the others. If they cannot play with any degree of skill or improve, allow them to drop out altogether if they so desire, and take up something in which they may become somewhat more proficient.
12. Set the situations so that all share in discussing sportsmanship and values, help in the organizing of tournaments, and discuss the possible uses of the game in their own lives and in the patterns of present and future society.

PHYSICAL EDUCATION IN FACT AND FANCY*

VINCENT DIGIOVANNA,
Director Physical Education for Men,
State Teachers College, Carbondale, Illinois

It has often been said that the beauty of a radio program lies in the fact that it can be turned off without a moment's notice. In order to forestall the lurking menace of outstretched hands reaching to whirl a harmless looking but all-omnipotent dial, commercial broadcasts spend millions of dollars annually to entertain and amuse us while they sell us their products. Insidiously, most of their programs lull us into a pleasant state of coma as we passively absorb their varied propaganda. As a result we tend to lose our functions of critical thinking and creative doing. Hence, with poor choice and promiscuity in the use of the radio, radio may easily become a negative influence in our civilization. It already has been termed one of America's mental flop-houses.

Be that as it may, my wish this afternoon is not to lull you into a pleasant state of coma, but to shock you into action, if possible, as you examine with me a phase of our educational system which is vital to the welfare and happiness of our whole society.

It is my privilege in the next few minutes to guide your thinking in a field of education which

* A radio address, broadcast over WEBQ, Harrisburg, Illinois.

has been termed, rightly or otherwise, physical education.

As you are well aware, all new movements in education undergo a formative process in which there is much misunderstanding and much confusion of purpose. This is understandable when one realizes, first, the great mass of conflicting thought which is generated in the evolution of any worthwhile movement and, second, the even greater mass of thought bound up with the misinterpretation of the same in the public mind.

Physical education, while it is as old as man himself, is, nevertheless, a relatively new member of the education family; that is, when we think of education as institutionalized into our present day school system. This same newness plus the rapid shift in our mode of living, which has necessitated equally rapid changes in the theory and content of physical education, are in large measure responsible for the confusion which exists, not only in the minds of the layman but in the minds of professional educators as well, as to the nature and function of physical education in our own democratic society.

The day has not long since passed when leaders in the field thought that physical education fulfilled its mission if it corrected postural defects and kept the children fit for their intellectual work. Limited as this aim may have been, it is interesting to realize that even as such physical education was justified as a fundamental phase of our school program. The sad thing is that there exists today in so many places a no more enlightened concept of the rich and broad education potentialities of physical education. Just as in this land of plenty we see all about us a shameful waste of natural resources in the grasp for immediate riches, so do we see on the part of the public and educator alike a willingness to clutch at the apparent and immediate values in physical education at the expense of the many more subtle and invaluable assets it has to offer.

The question naturally arises "What is physical education and what does it have to offer?" Broadly speaking, it is education itself working through the medium of a psychologically appealing activity program centering around sports, games, the dance, aquatics, and gymnastics. May I repeat—physical education is education itself using as its medium, or approach, a group of dynamic activities which are racially interesting to man: namely, sports, games, the dance, aquatics, and gymnastics. The term physical, which places the field, tends to carry with it the false connotation that its realm is limited to mere perspiration and peristalsis. The term is the result of the analytical mind of man who in his attempt to isolate and solve his own problems segmented himself into the trinity of body, mind, and soul. The resynthesis so necessary for the successful treatment of his problems is only now receiving the due attention of our educational leaders. We owe a debt of gratitude to Dewey, to the Progressive Educators, and to the Gestalt psychologists for the realization that man must be viewed as a whole; that is, as the summation of his intricately interwoven patterns of body, mind, and soul; if we are to do a scientific piece of educational diagnosis and guidance. Hence, as educators, no matter what our specialties may be, we have as our ultimate aim the same interest, namely, the full realization of the personality of the individual; a personality which is both socially acceptable and socially conscious. This is identical with the physical educator's aim, connotations to the contrary.

The next point in our original question involves the value of physical education. What does it have to offer? How important is it as an educational tool? Before we can reach any logical answer to the question we must investigate man's needs in the light of his nature and his society.

Biological and psychological studies of man have indicated that activity is the keynote of man's nature. Three facts stand out. (1) Man is made for and is in need of vigorous muscular activity, (2) man has an urge for self-expression or creation and is endowed with a sensitivity and powers of manipulation to achieve the same, and (3) man is in essence a social being, happiest as one of a group.

We also know that while man was primarily intended for living in a relatively more primitive setting than his environment today, which is that of a highly complex economic and technological society, it makes many demands upon him for which he was not intended. As a result, we find that man has difficulty in meeting his needs as an active, creative, and social being. This can be readily noted when we examine the factors involved. First, the machine is fractionalizing man's experience. It has a tendency to make him an inactive being by limiting the need for physical activity, by disturbing his normal rhythm, and by imposing vast amounts of leisure time upon him. It has a tendency to destroy his creativeness by removing the necessity for manual manipulation and craftsmanship, and by limiting the scope of his work, thereby removing its sense of wholeness. It has a tendency to destroy his personal ego by limiting the area of his responsibility, by depriving him of a sense of pride in the finished product, and by depriving him of the esteem of his fellow men who know him simply as another cog in the wheel. Second, in addition to the negative influences of the machine, certain forces in modern society have worked against a truly "social" society. The era of rugged individualism has hindered the development of a truly social concept through over-emphasis of individual propriety. Dictators have prevented individual and social development.

It follows then that if our race and our culture are to endure, we must make a determined effort to overcome the negative influences of the machine and society. Our most effective method of attack is through education. The implication is that our needs shall be met only in a society in which the democratic ideal of education prevails, for such a system of education predicates that adequate school facilities and leadership must be secured to insure equal opportunity for all, an opportunity which will equip youth to be masters of their own economic and social careers.

Our question now crystallizes itself into, "What can physical education do to overcome the negative influences of the machine and society, namely, the imposition of a sedentary life, the destruction of creativity and self-expression, and the creation of a non-social society?"

Let us consider activity first. Physical education deals in activities. It is based on a doing or functional philosophy. Its laboratories are the play fields, the gymnasia, the swimming pools, the out-of-doors. It exposes the individual to a wide variety of play activities which serve both as developmental sources during childhood and youth and as recreational and leisure time pursuits in adulthood. As purely vigorous muscular activity it helps to keep the body in tonus, thus counteracting in some measure the sedentary influences of modern life.

Creativity and self-expression? What can physical education do to insure the same for our citizens of today? It might be well to note that it is about the only remaining element in education of the type that fosters and permits expression to those original tendencies developed in the evolution of the race. Herein lies the secret of physical education's great popularity. The self-expression comes in the desire for mastery, for self-assertion, in perfection of movement; it comes through the many opportunities for choice and decisions in life-like games; it comes through the opportunities for leadership and fellowship in exciting and all-absorbing activities; it comes in the opportunities for success which a varied and well administered program insures; and it may also be exercised in integrated pageants, festivals, dance recitals, and exhibitions. Further, physical education leads to a freeing of activities. Through the dance students may be initiated into the realm of fine music, costuming, design, folklore, and infinite ramifications. Through the development and appreciation of a perfectly molded body a student may turn to sculpture, to art, to craftsmanship. Possibilities are endless. The result is a wholesome release of emotions. Social approval is gained; personal ego is enhanced; neural power is built; emotional stability is possible for greater numbers. Concretely this means fewer nervous breakdowns, fewer delinquents, fewer cases for insane asylums.

Now, coming to our third problem, what can physical education do to make our society truly social? Physical education can and must emphasize the ideal of the full development of the individual, as an individual and as a member of a group, where there is a give and take between the two, such that each will benefit most. Physical education can and must take into account individual differences and provide equal opportunity for all. In physical education situations then, governed and administered by rule according to social standards, individuals will learn to respect and consider the well-being of others. They will learn to cooperate for the common good. They will learn essentials of fair play and honesty. They will learn the true meaning of the broad terms, sportsmanship and fellowship, and live accordingly.

In brief summary then, it can be said that physical education does make a distinct contribution to the fundamental needs of man, in that it helps keep man an active, creative, social being.

However, while physical education is a most necessary phase of our educational scheme, its position in the educational sun has been retarded by four powerful groups of social influences. First, public opinion about school functions is conservative and it is difficult not only to introduce new activities into the curriculum, but to secure funds with which to finance the same. Second, our national life has been dominated until only recently by influences of pioneer existence where physical education went on as an integral part of home and community life. Hence, a general consciousness of the need for school-organized physical education has been of recent origin. Third, asceticism, with its contempt for the physical; scholasticism, with its emphasis on intellect and neglect of emotions, and Puritanism, with its fear of play are still exerting powerful prejudices against the program of physical education. Fourth, universities, until recently, have neglected the preparation of leaders in the field of physical education. This not only left the field without adequate professional leadership, but it left school administrators without criteria for judging its worth.

In many of our elementary schools, physical education consists solely of a recess relief period. In most of our high schools, interscholastic basketball constitutes the entire *"democratic"* program of physical education.

Consequently, when judgment is passed on the contributions of physical education to the whole program of education, little can be said in its favor. And the vicious circle goes on—no administrative understanding of what physical education has to contribute or how it may do so—no trained leadership to carry on the program—no worth-while results.

Who suffers? The child suffers. Perhaps it is your child. "What are you going to do about it?"

A SURVEY OF SOME ASPECTS OF PHYSICAL EDUCATION IN CALIFORNIA SCHOOLS

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Some time ago questionnaires were sent to 135 California High Schools and Junior Colleges on the subject of division of physical education expenditures between Board funds and Student Body funds, amount of expenditures for first aid supplies used in physical education, special medical service for physical education contests, salaries paid physical education instructors in comparison with other teachers, method of bookkeeping in regard to student funds and other miscellaneous information. Replies were received from 118 schools and summaries of these replies are presented in this report.

The conclusions which have been drawn are based upon the totals of the replies received and, except in one instance, no attempt has been made to reduce expenditures to an A. D. A. or other unit-basis because differences in length of the school year, the school day and class periods as well as variances resulting from one school being in a metropolitan area while another is rural, render such figures most unsatisfactory as bases for comparisons. Accordingly, the figures and percentages used are designed to afford only a general view of various Physical Education departments in comparison with those of other schools.

In comparing these replies we took into consideration that many of the figures were only approximate ones and also that, in many cases, only a portion of the questions were answered so that the results secured are only partially complete as to the entire situation. In the table below, for example, the percentages given are based on the information we received and, quite often, would probably be materially different if we had complete data from which to work. These percentages do serve, however, to indicate the general division in manner of payment.

It should be understood that none of the data presented is to be presumed to reflect in any way upon the quality or efficiency of physical education instruction in any school.

PERCENTAGE OF EXPENDITURES FOR PHYSICAL EDUCATION SUPPLIES, EQUIPMENT AND REPAIRS PAID BY SCHOOL DISTRICT AND BY STUDENT BODY

(These are based on 1938-39 expenditures)

JUNIOR COLLEGES

	Paid By			*Paid By*	
District	*District*	*Student Body*	*District*	*District*	*Student Body*
Brawley*	.....	100%	Pomona*	100.0%	.....
Chaffey	27.5%	72.5%	Riverside	39.7%	60.3%
Citrus*	70.4%	29.6%	Sacramento	97.6%	2.4%
Compton	58.8%	41.2%	Salinas*	14.0%	86.0%
Fullerton	17.3%	82.7%	San Bernardino	16.6%	83.4%
Glendale	100.0%	.....	San Francisco*	40.9%	59.1%
Lassen*	78.9%	21.1%	Santa Ana	26.4%	73.6%
Long Beach	56.4%	43.6%	Santa Rosa	98.7%	1.3%
Marin	46.3%	53.7%	Taft*	100.0%	.....
Modesto	57.2%	42.8%	Yuba Co.	22.9%	77.1%
Pasadena	60.9%	39.1%	*Junior College maintained by High School District.		

HIGH SCHOOLS

District	Paid By District	Paid By Student Body	District	Paid By District	Paid By Student Body
Albany	98.1%	1.9%	North Sacramento	38.2%	61.8%
Alhambra	67.1%	32.9%	Oakdale	57.2%	42.8%
Antelope Valley	100.0%	.....	Oakland	56.1%	43.9%
Azusa	72.5%	27.5%	Ontario	41.7%	58.3%
Beverly Hills	100.0%	.....	Orange	66.2%	33.8%
Brawley	15.0%	85.0%	Oroville	48.4%	51.6%
Burbank	88.9%	11.1%	Palo Alto	46.7%	53.3%
Campbell	74.0%	26.0%	Pittsburg	51.9%	48.1%
Centerville	66.9%	33.1%	Placerville	92.3%	7.7%
Chico	69.1%	30.9%	Pomona	100.0%	.....
Colton	92.8%	7.2%	Porterville	37.1%	62.9%
Compton	100.0%	.....	Red Bluff	58.4%	41.6%
Covina	100.0%	.....	Redondo Beach	58.4%	41.6%
Daly City	29.9%	70.1%	Richmond	76.7%	23.3%
Delano	54.9%	45.1%	Riverside	58.7%	41.3%
Dinuba	47.1%	52.9%	Sacramento	100.0%	.....
El Centro	44.4%	55.6%	Salinas	46.3%	53.7%
Elk Grove	82.8%	17.2%	San Bernardino	70.7%	29.3%
El Monte	100.0%	.....	San Diego	100.0%	.....
Escondido	100.0%	.....	San Francisco	36.2%	73.8%
Eureka	21.0%	79.0%	Sanger	64.1%	35.9%
Fresno	100.0%	.....	San Luis Obispo	100.0%	.....
Fullerton	23.7%	76.3%	San Mateo	49.9%	50.1%
Glendale	100.0%	.....	San Rafael	32.4%	77.6%
Grass Valley	.....	100.0%	Santa Ana	87.0%	13.0%
Hanford	47.2%	52.8%	Santa Cruz	55.3%	44.7%
Hayward	89.2%	10.8%	Santa Maria	54.7%	45.3%
Huntington Beach	67.9%	32.1%	Santa Paula	40.6%	59.4%
Inglewood	67.0%	33.0%	Sausalito	15.9%	84.1%
Lodi	63.4%	36.6%	Selma	69.6%	30.4%
Long Beach	48.8%	51.2%	Sonora	38.1%	61.9%
Los Gatos	30.7%	69.3%	South Pasadena	60.5%	29.5%
Madera	28.5%	71.5%	Stockton	53.6%	46.3%
Martinez	86.8%	13.2%	Susanville	93.3%	6.7%
Marysville	31.8%	68.2%	Taft	100.0%	.....
Monrovia	66.1%	33.9%	Ventura	65.8%	34.2%
Montebello	100.0%	.....	Visalia	48.1%	51.9%
Monterey	71.6%	28.4%	Washington	40.3%	59.7%
Mountain View	70.0%	30.0%	Watsonville	82.4%	17.6%
Napa	57.9%	42.1%	Whittier	68.8%	31.2%
National City	66.5%	33.5%	Yreka	79.2%	20.8%
Newport Harbor	100.0%	.....	Yuba City	.....	100.0%

The total reported for High Schools in the above table amounts to an average of 62.6% of the total expense as paid out of regular school funds and this percentage may be presumed to be fairly accurate for the State as a whole. To illustrate the application of this, Santa Ana District is listed as paying 87.0% of such expense and therefore shows an excess of 24.4 points or, in other words, is 39.0% above the general average in the amount of payments made out of regular school funds for physical education supplies, uniforms, etc., and, accordingly, the amount of payments made by the Student Body, being only 13.0% of the total, is 24.4 points or 65.2% below the state average of 37.4%.

The Junior College totals show almost exactly 50% paid by the district and 50% out of student funds. The reason for the Junior College percentage being 50-50 is twofold; first, Junior College football draws in more gate receipts so that the Student Bodies have much more to spend and, second, the student body dues or tickets in Junior

College are from two to five times as high and enjoy a much larger percentage of sales than in High Schools which again makes the Junior College Student Body treasury much better able to pay physical education costs.

A comparison of average A.D.A. costs based on these tables, while not very accurate, is interesting. The total expenditures by High School Districts and Student Bodies of High Schools, combined, divided by the total A.D.A. show a unit-cost of $1.82 while the same procedure in the case of the Junior Colleges shows a unit cost of $2.83 or over $1.00 per A.D.A. more spent in Junior College for Physical Education supplies, etc.

The second group of questions had to do with First Aid Supplies and Medical Service. The most noteworthy observation here relates to the wide range in the amounts listed as being spent for First Aid Supplies even when the sizes of the various schools are taken into consideration. This and the fact that there is no uniformity in the way they are paid indicates a wide divergence of opinion about accounting for them. For example, eight schools charge all the first aid supplies to the student body, fifty-five charge them all to the district and eighteen charge them to both student body and district. Then, of these seventy-three who charge all or part to the district, twenty-nine list the expense under 2B or Instructional Supplies, thirty-five under 5B or Supplies for Auxiliary Agencies and six charge the costs partly to 2B and partly to 5B, while those whose reported total is extremely low undoubtedly classify the expenditures in with other supplies and do not account for them separately. Similar confusion exists in Junior College accounts as well.

It seems that some rule regarding these charges should be worked out and it appears to me that a good one to follow would be that used by Los Angeles. Their plan is to arrive at an estimate of the percentage of need of first aid supplies resulting from physical education as compared with the need resulting from all other phases of school life and charge these supplies accordingly to 2B and to 5B. Los Angeles estimates this percentage ratio as 50-50. If desired, that amount of adhesive tape, particularly, and of other first aid supplies as well, that is used in interscholastic contests such as football games could be paid for out of Student Body funds.

We also find here a wide choice of practices in regard to the employment of special doctors for physical education, particularly for football games. Forty-eight schools replied that they employed special doctors for this purpose and forty-two schools said they did not. In this latter case it is to be presumed that the taking care of injuries sustained during physical education is a part of the duties of the regular school physician. In this latter category, we find large schools like Fresno, Glendale, and Long Beach, as well as smaller schools and in all these cases the costs are paid by the District. Out of the forty-seven that do employ special doctors, thirty-eight report concerning who pays these doctors and, of these, twenty-two replied "Student Body" and sixteen replied "District". By a process of elimination, since only 21 indicate the Student Body pays these special doctors, we secure a total of 69 schools (76⅔%—of those reporting)—all or practically all of whom take care of physical education injuries by expenditures from school funds. The payments made to special doctors run all the way from $5.00 per game, $2.50 per hour, $7.50 per game, and $10.00 per game to $100.00, $200.00, $300.00 per year and to the top figures of $800.00, $1200.00 and $1500.00 per year.

In the first group, where the annual payment works out as not over $100 per year, we find twenty-two schools in the middle group, paying $100 to $300 per year are ten schools; and in the upper group paying over $300 per year are six schools.

It is interesting to note that of the nineteen larger high schools (over 1500 A.D.A.), namely: Alhambra, Bakersfield, Compton, El Monte, Glendale, Inglewood, Long Beach, Los Angeles, North Sacramento, Oakland, Ontario (Chaffey), Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Mateo, Stockton, aand Whittier, five do not employ a special doctor at all, seven pay up to $10 per game, one pays $90 and two $100 per season. Then one pays $50 to $75 a month for the season and another $250 for the season or year. Finally, one pays $800 and the last one $1500 for the season or year.

This means that only two of the nineteen larger schools are in the highest salary bracket while four of the twenty-nine smaller schools pay these top salaries.

This same type of data in regard to Junior Colleges is very interesting. Here, where the student bodies have so much more money, we find only one of the high salaries paid to special doctors and eleven out of twenty-three colleges employ no special doctor at all. Of the twelve that do employ a special doctor, two pay less than $100 per year, eight pay from $100 to $350 and one pays over $350.

Answers to the third group of questions show that the practice that was once quite prevalent, that of paying higher salaries to athletic instructors in high schools than to other teachers of the same length of service, is dying out. At least, only eighteen schools out of eighty-nine say they are now paying higher salaries in relation to other

teachers. Another comment that might be made is that if the high schools that reported sufficient data so that an average salary might be listed, are divided into groups representing Northern and Southern California the grand average of these average salaries in the North is $2063.50 and of those in the South is $2154.70.

If, on the other hand, these high schools are divided according to size, those over 1200 A.D.A. being put in one bracket and those under in another we find the average of these average salaries to be $1986.60 in the smaller group and $2233.20 in the larger.

The Junior Colleges have an average salary of $2601.60, or about $500.00 higher than the High School average, and only three report higher salaries being paid to athletic instructors than to other teachers.

In regard to accounting for Student Body funds the answers indicate that most high school governing boards feel that Section 1.50 of the California School Code which says: "The governing board of every school district of whatsoever kind and class shall have power and it shall be its duty to provide for the supervision and auditing of all funds raised by student bodies or student organizations using the name of the school. The cost of such supervision and auditing may constitute a proper charge against the funds of the district;" imposes an obligation on them to pay for the services of the teacher or bookkeeper who keeps the student body accounts as in only 12 cases does the student body pay any of this cost. Practically all Boards recognize the necessity of a regular audit of these funds and in only one case does the Student Body pay for the audit. In making this audit forty-four schools employ an outside auditor, usually a certified public accountant and four others are examined by the grand jury auditor. The other thirty-four schools have their accounts audited by the principal or a teacher, by the school business office or by a committee of the Board or a committee of teachers. It is also worthwhile to note that seventy-six out of eighty-one schools have these audits made annually or oftener.

In about half of the Junior Colleges the student body pays these bookkeeping charges but the District practically always pays for the regular audit which, except in three instances, is always done by an outside auditotr or accountant.

In the final group of questions we find that out of ninety high schools, thirty-eight or 42% are now playing football at night. A few years ago only a very few were doing this. Of these thirty-eight, thirty-two play on their own field and six rent the field on which they play, some paying flat rental charges and others a percent of the receipts.

Out of fifty-nine schools reporting all but fourteen carry protection in the form of liability insurance on spectators at games. The premium is usually paid by the District except that in three cases the Student Body and in two cases the owner of the field pays the premium.

In regard to ticket sales, in all but eleven cases a member of the faculty either has charge or supervises. In all but nine cases those in charge of ticket sales do this as a part of their regular duties, receiving no extra pay.

Among the junior colleges all but two out of twenty-three or 91% play football at night. And of these twenty-one, six rent the fields on which they play, paying various flat charges and percentages. Of these twenty-one all but three carry liability insurance on spectators.

In all but one case a member of the faculty or someone from the school business office has charge of or supervises ticket sales but in only six of the twenty-one schools is any special remuneration given for this.

In this questionnaire it was asked whether Section 6.471 of the California School Code which specifically permits districts to purchase football uniforms, etc., would cause an increase of total expenditures or not. Of the 102 schools and colleges who replied, thirty-eight said "yes" or "likely", forty-five said "no" and nineteen were doubtful or did not know.

THE PORTENT OF THE NATIONAL DRAFT FIGURES

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Is the United States a nation of weaklings? Has our American civilization simply produced a nation of pushovers for the totalitarian system? Is American Democracy in the decadent state Hitler's "Mein Kampf" would have you believe? These are the important, fundamental questions behind the Isolationist—All Out Aid for Britain controversy; behind the Lindbergh-Willkie speeches. Has the United States the man power—yes, and the woman power, to out-produce, out-fly, out-sail, outsink, and out-destroy a German dominated Europe?

Of course the only final and conclusive test is a fight to the finish. However, the results of the Selective Service Examinations offer vital data on the most important phase of the question, the physical capacity of our youth, for national fitness is individual fitness multiplied by one hundred and thirty million.

One-half of our men between the ages of twenty-one and thirty-five were not able to meet the standards for our Selective Service Army.

These draft figures are a national challenge. The present Army Medical Reports are the first definite analyses of our national health we have had since the last war. Just what do these analyses show? You will probably mumble in your beard about "26% rejections, what's that?" Well, it isn't quite all. Figures in New York City, which are fairly indicative of our national situation, show that on June 30, 1941, 114,850 draftees had been examined. Of these, 49,435 were accepted for full military duty, 34,977 may be called on for limited duty while the other 30,438 won't have to worry about this peace time army—they were totally rejected. These are quite a few more than the 26% you read about in the first newspaper reports. Specifically, 56.94% of our men between the ages of twenty-one and thirty-five were not able to meet the standards of our Draft Army.

Perhaps the standards are too high. Well, according to Selective Service regulations, the Army did not look for the physically perfect, but tried to "procure men who are physically fit, or who can be made so, for the rigors of general military duty." That's not being too unreasonable.

Here's John Selectee. He weighs 100 pounds, has six masticating and six incisor teeth, wears glasses which make it possible for him to see at twenty feet what he should see at forty feet. John suffers from color blindness, and hears at ten feet what he should hear at twenty. He's a victim of laryngitis, hay fever, acne, a lateral spin curvature of two inches, and flat feet. He has a missing right index finger, arrested pulmonary tuberculosis, enlarged liver, tumors of abdominal wall, goiter, anemia, and muscular tremors. He may seem like a total wreck to you, but he is theoretically Class 1-A to the Army—if he has been able to get about and do his work in civilian life. About all you can say for him in the beginning is that he has a good heart; but with a year of training the Army thinks it can produce a normal specimen.

Yes, that's the story about the twenty-one to thirty-five year old males: rejections for general military service of about fifty per cent. And how good are the fifty per cent the Army accepts? Take Private Wright for example. No, he isn't the chap with all the defects, but can he hike twenty to thirty miles, or drive a truck for ten hours and still have something on the ball? How would he stack up against a Storm Trooper? Frankly, we just don't know what he can do. He wasn't given physical capacity tests. Remember, the Army standards were planned to select men who are organically sound and who could be trained for general service.

Given a year, the Army will probably build up the physical capacity of most of these men, but acceptance by the Army doesn't mean you have good physical capacity. It means they think you have the makings of a good soldier.

What about other age groups? What about Wright's older brother who has a wife and two kids, or his sister, Kate, who's knitting for about a half dozen war relief organizations? Are they any healthier? Certainly the older groups aren't model physical specimens. Men between the ages of thirty-one and thirty-six show a rejection of 29.24% compared with rejections of 18.95% in the twenty-one to twenty-five age group, and 23.81% in the twenty-six to thirty group. Of course these men are just a small part of the general public, but considering just how general modern warfare is in the scope of its sufferings, we must begin to consider the question of national physical capacity.

The national health situation needs attention. What should you do about it? Some would have you believe that you should hope for a more complete public health service with its subsequent rehabilitation program, but that might take quite a time. Here are two things you as an individual and as a physical educator can do now. They are,

first, get yourself in fine physical condition, and, second, help to formulate concrete valid rules of personal hygiene for general use.

Now for your own personal hygiene. Look at the reasons for rejection from the Army, and do a bit of personal checking.

How are your teeth? They don't ache. When they do it will be too late for the best and most economical treatment. Rejections of 9.39% were caused by defective teeth, and, though the Army Medical Report doesn't say so, we'll give you odds that at least half those bad teeth don't ache. Seeing your dentist, and regular tooth brushing routine aren't just commercial blurbs—they're vital necessities.

Maybe you think your vision is perfect. Could be, but 10.39% of those IV-F classifications were the result of defective vision. Through some physical culture advocates, we have recently been introduced to a system of eye exercises, but for ordinary purposes, most people find that correcting these faults is a simple matter of seeking expert professional advice and obtaining accurately fitted, well-constructed glasses.

The underweight and overweight received the Medical Boards' special attention too. There were more slim than rotund draftees in the 1.79% rejections in this class. A regular diet of foods with greater food value, and more rest would easily remedy this. Again, professional advice will simplify the task.

Heart disease and disorders of the blood vessels, which accounted for 10.61% of the rejections, will, of course, nearly always scare the sufferer into his physician's office, but any of the disorders listed in the Army rejections should be given competent medical attention. A good idea for building a personal defense mechanism would be a thorough medical check-up, and then a health routine. Maybe you have a routine, or think you don't need one. Well, how do you score in this check-up?

Do you:
- Consult your dentist once or twice a year?
- Have a health examination at least once a year?
- Take medicine only on medical advice?
- Make a conscientious effort to correct your defects?

Do you:
- Go to bed and arise regularly at approximately the same time six days a week?
- Eat at regular hours?
- Have a definite program which you keep consistently, with regular hours for work, sleep, exercise, and recreation?
- Get plenty of fresh air and sunshine?
- Sleep with the windows open?
- Try to avoid close, poorly ventilated rooms, especially those with high temperatures?

Does your diet include daily:
- Not less than a pint of milk?
- Two vegetables besides potatoes—one leafy vegetable?
- Some cereals? (Count bread as a cereal)
- Some fats?
- Some fruit, preferably raw?
- Meat, eggs, cheese, and nuts—in reasonably small quantities, and usually at not more than one meal?

Do you:
- Eat sugar foods, such as candy and sweet drinks, at the end of the meal only?
- Eat slowly and under conditions that are conducive to a serene mental attitude?
- Consistently avoid those foods which you know do not agree with you?

Do you:
- Drink six to eight glasses of water daily?
- Drink one or more glasses of water on rising?
- Bathe after exercising?
- Brush your teeth thoroughly morning and night?
- Keep your hair and scalp clean?
- Keep your nails clean?
- Bathe frequently?
- Get sufficient rest each night?
- Relax for at least a half hour during the middle of the day?
- Rest after a hearty meal?
- Take enough vigorous exercise to prevent insomnia?
- Secure at least one-half hour of sweat-inducing exercise three times a week?
- Develop interest in some outdoor hobby—hiking, tennis, golf, etc.?
- Have at least one free bowel movement daily without the use of drugs?

You should be able to answer "Yes" to practically all of these questions, for they are based on simple rules of personal hygiene followed by most people who presume to take care of their health. They do not represent an ideal which few can achieve, but a norm which all can attain.

Jesse Jones, our Secretary of Commerce, says: "It may become necessary to do in one day what we would ordinarily do in three or four." Present times are far and away from being a national picnic, but the physically fit will be better able to take it. If you can answer "Yes" to most of these questions, you are building for solid, enduring health. If you cannot answer "Yes" to most of these questions, your physical hygiene habits need changing. That is how this check list is most useful. All you have to do is change your daily routine so that you can conscientiously and honestly answer "Yes" to these questions.

What do you think of this list of "Dos"? They are just one man's opinion. Do you know of a valid list of suggestions for proper personal hygiene—a list that you could give John Selectee and be sure you are giving him the best? I don't. And isn't this a glaring weakness of your profession? Surely we should be able to agree upon a list of simple "Dos" for proper living. May I suggest that one very worthwhile function Phi Epsilon Kappa could perform would be to validate such a list. This result known as the Phi Epsilon Kappa Rules for Personal Hygiene could be given national publicity, and would be of tremendous help to our youth who are asking for concrete, simple rules for healthful living.

In a national emergency, values change. This is very true of physical capacity—the capacity to do continuous work. Its values have been greatly enhanced, and one's physical capacity is now as important as his bank balance. Health is not just freedom from defects which cause deferment in Selective Service examinations. It is having the energy and pep to do a good day's work, and to enjoy life, to give that "full measure" which so often means the difference between occupied territory and a free democracy. It is a sound body machine properly run. Your physician is trained to detect structural defects in your physical mechanism—use him! But only you know when you are tired; when you overdo; how you react to certain foods—all sign posts that indicate reefs on the course to good health.

In times of stress new capacities are developed. This period of national emergency can be an era of physical improvements for those who recognize the portent of the national draft figures.

INTERESTING FACTS BROUGHT OUT IN A QUESTIONNAIRE SENT TO TWELVE PACIFIC COAST FOUR-YEAR COLLEGES AND UNIVERSITIES RELATIVE TO COORDINATIONS IN STUDENT HEALTH PROBLEMS*

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From time to time it is enlightening to administrators of school health programs, as well as to teachers in the field, to obtain a birdseye view of not only their program, but their program in the light of the total offerings of the schools throughout the state of which they are a part, or to the section of the country in which their school is located. The following paper was prepared with that viewpoint in mind.

Health Service Program

In the twelve Pacific Coast schools studied, there are, in round figures, 59,000 students registered. In these schools there are seventeen full-time physicians, sixty-nine full-time nurses, no full-time dentists, and but one dental hygienist. By way of generalization, this might mean one full-time physician for every 3,466 students, one full-time nurse for every 826 students, no dentists for 59,000 students, and one dental hygienist for the 59,000 students.

The individual in charge of the health service program in three-fourths of the schools is known as Director of the Health Service. Five of these Directors hold M.D. degrees, two hold Ph.D. degrees, four have M.A. degrees, and one has the B.S. degree.

In eight of the twelve schools the responsibility for conducting the affairs of the health service, including the yearly health examination, is in the hands of the health service division. The department of physical education is given this control in the remaining four schools.

In the twelve schools, 125 physicians are needed to examine 17,000 students each academic year. This results in one physician examining 136 students during the four day average given over to the work. This amounts to thirty-four examinations per day per physician.

There is little agreement on the amount of time a physician should give each student per examination. In nine of the twelve schools the yearly health examination is part of the registration. In seven of the twelve schools the examination is conducted by one physician doing the entire routine, while in the other five schools, specialists are employed.

In all but one of the twelve schools, clerks, gathered from the college at large, are used in the examination. They are paid forty cents an hour. In one school they receive no pay, and only men

* A paper presented before the Eighth Annual Meeting of the American Student Health Association, Pacific Coast Section, Fresno, California, November, 1940.

and women on various kinds of university scholarships are used.

In eleven of the schools the findings of the health examination serve as guides in determining the academic load as well as the physical education program of the student. Six of these schools depend on the health service director for his recommendation, while the remaining five place that responsibility on the faculty adviser. One school out of the twelve makes use of a master chart on which the students' health, social, vocational and mental record are entered. Two schools of the twelve make provisions for a sight conservation program. In five of the twelve schools smallpox vaccination is required. In five of the twelve schools a psychiatrist is provided for student consultation.

Eight dollars and twenty-five cents a year appears to be close to the average health service fee charged each student for the academic year.

The problem most common to the health service program of the twelve schools is the need for more space in which to conduct the yearly health examination. In the four year colleges, the need of a full-time physician was dominant.

Healthful School Living Program

Eleven of the twelve schools have an active committee on coordinating student health. This committee is appointed by the president of the school. The personnel of these committees embraces the following: deans of men and women, registrars, dormitory heads, directors of the health service, sanitary engineers, medical school faculty, school nurses, department heads of physical education, bacteriology, biology, and chemistry. The chairmen of the committees on student health vary from year to year. This academic year, six chairmen are directors of the health service. The other six are distributed through the faculty. One university has two committees, one composed of students only, with an adult adviser and the other comprised of faculty and administrative heads.

The problems most common to the program of healthful school living in the twelve schools studied involves a more complete supervision of students living off the campus and a control over the extra-curricular programs of the student body.

Instruction for Health Programs

Seven of the twelve schools require freshmen and certain majors to include personal hygiene in their courses of study. Seven of the twelve schools hold the physical education department and staff responsible for the administration and teaching of the health courses.

There is great variation in methods of choosing subject-matter for the health courses. Four of the twelve schools choose a major portion of the content from the findings of the health examination as well as from facts gathered from student visitation to the health service.

Health courses are permitted in all schools but one. Seven of these schools hold either elective or required courses twice a week for a semester or term, giving two units of credit. In the remaining schools the courses meet but once a week and give one unit of credit. The majority of schools indicated that making the course materials functional in the lives of the students and provision for advanced courses on an elective basis were their chief problems.

Physical Education Program

In eleven of the twelve schools there is a full-time director in charge of the program. The M.A. degree is the most advanced held by nine of the twelve directors.

Six of the twelve schools give written final examinations in physical education. Rules, team play and health are checked in the examination. Most common points used for marking are, progress in learning, skills, achievement, attitude, knowledge, attendance and actual performance.

Speeding up the transportation of health information between the health service and the departments of physical education is the most common problem in coordinating the work.

The following is a compilation and listing of the health problems confronting the twelve schools participating in this study:

Health Service Program

1. How to make it possible for all graduating seniors to have a health examination at the completion of their college work.
2. How to motivate the faculty advisers so that they will make use of the health information about the students as provided by the health service.
3. To obtain one or more full-time physicians.
4. The need for professional students in health, such as medical students, to aid in the routine clerical work of the yearly health examination.
5. Making provision for the large number of students who have matriculated primarily for the beneficial effects of the climate.

Healthful School Living Program

1. To improve the housing and living conditions of students adjacent to the campus.
2. Protecting the social and physical well-being of the student working off the campus.
3. To obtain a campus dietitian who will check the menus offered the students both on the campus as well as in nearby eating houses.
4. The need of a survey of physical health hazards confronting students on the campus as well as in the adjacent environment.

5. A better control over the extra-curricular programs of the students, so as to permit them more time for rest and sleep.

Instruction for Health Program

1. To obtain more health courses offered on an elective basis.
2. To obtain a course in personal hygiene.
3. To provide advanced courses in social hygiene, marriage preparation and the like.
4. To make the instructional program more functional in the daily experiences of the students.
5. To increase the class meetings to two hours a week with two units of credit.

Physical Education Program

1. Closer cooperation with the health service in obtaining health information regarding students at the beginning of the school year, rather than at mid-semester.
2. To obtain more space and equipment.
3. The difficulty of arriving at a final mark for a student who has been shifted about for health reasons.
4. The lack of a medical examination for students engaging in intramural competition.

STRONG POINTS DISCOVERED IN HEALTH PROGRAMS

1. In the twelve schools there are twelve functioning health service programs. In the majority of schools, full-time physicians and nurses are on the job. In all schools but one, health service program influences the academic field.
2. Students in all phases of college life receive at least one health examination during the first year of matriculation.
3. In all schools remediable health conditions of the students are followed up, and treatment or advice is given.
4. There is an active committee on student health problem in all schools but one. These committees are chosen from administrative staff and faculty.
5. The work of these health committees is not confined to the health problems of the campus, but the scope includes environments in which the student works and lives while not on campus.
6. A course in personal hygiene is conducted in all schools but one. The subject-matter and methods employed in teaching are becoming more functional in the lives of the students.
7. There is a recognized physical education department with an administrative head in all but one school. It is apparent that the control of the total health program in the majority of the schools falls under the jurisdiction of this department.
8. There is a growing tendency to move away from the narrow confines of attendance and skill in determining marks for students in physical education. A broader approach involving such items as health, social participation, attitudes, rules, team play, and personal adjustment factors, as well as attendance and skill is being used.

WEAKNESSES APPARENT IN HEALTH PROGRAMS

1. Four schools with a yearly enrollment of 9,000 students have no full-time physician.
2. Twelve schools, with a total yearly enrollment of 59,000 students have no full-time dentists and only one has a dental hygienist.
3. Clerks from all walks of college life are employed to aid physicians in checking intimate details during the health examination.
4. Too frequently, faculty advisers are entrusted with the task of interpreting medical findings, while attempting to aid the student in adjusting his academic load.
5. In only one school is there a master chart on which the mental, social and physical well-being of the individual is entered.
6. There is a weakness in the program of sight conservation, immunization against disease and counseling in personality problems.
7. There is too much variation in unit credit permitted for courses in health.
8. There is a need for standards on qualifications for instructors in hygiene courses.
9. The major weakness is a lack of a health coordinator or coordinating committee which should see to it that each phase of the health program contributes its share in bringing about the health ideal toward which we individually or collectively are striving.

HALE AMERICA

THE WEALTH OF A NATION IS THE STRENGTH OF ITS PEOPLE

By ROBERT H. COATES
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Familiar events of grave importance are making it vital that the United States waste no time in transforming itself from a traditional peace-loving nation to the greatest military power in the world—on land, on the sea, and in the air.

But this is only a small part of the job.

History has proved over and over again that no nation—however great—can long survive if its people are not physically fit and wholesomely strong in body as well as in mind.

The showing at the Olympic games of 1932 at Los Angeles and in 1936 at Berlin, should have been a warning for the United States to prepare physically. The Japanese in 1932 amazed us with their athletic prowess in California, particularly in swimming, and the Germans told us in 1936 by their remarkable improvement in track and field and crew at Berlin that we were finished as a leader in sports unless we mended our ways. In 1908 in London, continuing to 1924 at Paris, and in a lesser degree in Amsterdam, we saw the Stars and Stripes run up the victory pole at these meets with monotonous regularity, but in Los Angeles in 1932 we saw the Japanese flag flying in many of the events that we felt were conceded to us and then when Germany participated in 1936 for the first time in the Olympic games since 1912 they actually stole the show.

There is never an effect without a cause and the cause is quite understandable. Man for man, and woman for woman, we are not 50 per cent as good physically as our forefathers who built this country. Of course their are exceptions, but generally we suffer by comparison.

As America progressed and cities were built transportation came into use; through the inventive ability of our people all the modern conveniences that we now enjoy came into use. Instead of walking, we now ride, instead of laboriously plowing and digging ditches, we see the farmer sitting on a tractor and the laborer watching the steam shovel do his work. The same story applies to the factories. Men who used to be worked hard physically all day now sit at their work and watch machines produce the finished product.

People work hard mentally today, but they are not required to do the work that made our forefathers strong. Seventy-five per cent of our people ride to their employment, and then sit still all day, and ride back home again. They give no thought to proper diet and food values and take no exercise whatsoever, and then they wonder why they are nervous and physically run down. If we continue this procedure in a few years 75 per cent of our boys under thirty-five years will fail to meet physical requirements for the army, and we will not be able to build institutions fast enough to care for those who cannot keep up with the pace we have set for ourselves.

The revelations of the World War and the number of rejections (45%) in the present Selective Service (as of October, 1941):

Ten Major Causes	*Percent of Total Rejections*		
	Selective Service System	Army	Rank
1. Teeth	18.7	22	(1)
2. Eyes	11.1	13	(2)
3. Cardio-Vascular system	9.3	7	(5)
4. Musculo-Skeletal Defects	7.7	4	(9)
5. Mental and Nervous	7.1	10	(3)
6. Ears, Nose, Throat	5.5	9	(4)
7. Hernia	4.4	6	(6)
8. Lungs	4.1	4	(9)
9. Genitalia, inc. Venereal	3.7	5	(8)
10. Feet	3.2	6	(6)

The above table gives ample proof that the physical qualifications in youth for defense are not rapidly developed or suddenly acquired.

Freedom from physical defects, and the development of such qualities as coordination, agility, courage, endurance are a process of growth from early childhood, therefore should become the concern of the community.

Making the United States the most physically fit and healthiest nation in the world was paramount in President Roosevelt's mind when he embarked upon the all-out program for national defense.

In setting up the Office of Civilian Defense, a nationally known figure, New York's Mayor LaGuardia, was selected. Fiery and dynamic, he will bring the program home to the laymen in terms of its vital, national significance.

In charge of the Office of Civilian Defense's most important component, the Division of Physical Fitness, an important civic leader, an internationally known athlete and Olympic oarsman, married to a physical education teacher, and steeped in physical education through his associations was placed John B. Kelly, who is able to win the respect and support of both legislators and community groups in furthering the HALE AMERICA program.

National leaders in Health, Medicine, Physical Education, Recreation and the Sports World were consulted and Advisory Boards from these groups are now being formed to aid in guiding the policies of this Division.

The fact that the recognized leaders and experts in our nation are offering their services voluntarily is an indication of the sound foundation of this program.

Then the Regional Directors, in charge of the nine defense areas of the country, are being appointed from the recommendations of various professional and educational sources. Each Governor recommends his own State Director. A survey of the list of these appointees invariably reveals that career men in the field are being selected.

Philadelphia is the only local division at the present time, being set up as the model agency for other communities to pattern after or modify the organization to suit their local needs.

Two coordinators, a man and woman, have been appointed in each of the following fields to work under the local director:

1. Schools and Colleges
2. Industrial
3. Recreation.

The Philadelphia Board of Education selected and loaned the two Coordinators for the School and College Program. The local director was loaned from his university and other professional affiliations.

A Philadelphia Advisory Board consisting of representatives of all organizations and leaders of all activities interested in Health and Physical Fitness has been organized.

The Public Relations Department of radio and newspaper men and a Speakers Bureau complete the local setup.

Of course a measured amount of so-called "ballyhoo" is necessary to secure the attention and interest of the public in a HALE AMERICA. Therefore, certain outstanding persons and athletes prominent in the Sports World have been enlisted as volunteers for the Sports Advisory Board.

However, it is important that the professions and the public know that capable, professionally trained individuals are now earnestly engaged in organizing and carrying out a carefully considered program.

Voices of physical educators have been crying the needs of America in the wilderness of Physical Inertia for many years. Now, the golden opportunity we have long awaited is here. HALE AMERICA is headed by a public figure who is attempting to work through existing agencies to place physical fitness on the high professional standards we have long advocated.

The general objective is to make all persons of all ages of both sexes aware of the necessity of becoming physically fit and to aid them in forming habits of Exercise and Health Routine, such as a periodic Medical Examination so that Physical Fitness may be gained and maintained.

Two general educational viewpoints form the background for all our work.

1. The immediate short term plan which concentrates on the development of physical fitness in the shortest time possible. The emergency confronting us demands emphasis at once on this short term program.

2. The long range plan which concerns itself with the development of the "whole" individual through emotional and mental orientation and the demonstration of democratic procedures of planning and participation. This is partly embodied in present day school and college procedures, but we need more time daily—one to two hours as a minimum—more facilities, and more teachers. A continuous program from the beginning of elementary school life, through college, and extending into adult life is the ultimate goal.

The main emphasis of the program will be on increased participation in all types of worthwhile physical activities for all ages and sexes through

1. Creating interest in, and a desire for participation in developmental activities.
2. Establishing ways and means for increased use of present facilities.
3. Creation and development of new facilities.
4. The securing of additional personnel for regular service, volunteer service and special "spot" service.
5. The development of standards to insure quality of work.
6. The advancement of cooperation and coordination necessary for joint use of facilities and personnel by various agencies.
7. Means for testing results.

The Division of Physical Fitness offers a program that everyone can get behind as well as physical educators. We believe that most everyone is for the defense of their country and here is the way to make America Physically Fit for anything.

The wonderful part of it is that nothing will be wasted if we do not have war. We will all feel better because the nation will have become aware of Physical Fitness and realize the value as individuals of becoming and staying HALE AMERICANS.

DANCERS COULD MAKE GOOD LACROSSE PLAYERS

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When a good game of women's lacrosse is being played, the spectator is at once conscious of a state that in the theatre is called empathy, and he finds that a definite rhythm begins to possess him as he watches the swiftly moving figures going down the field swinging or beating out the metre of the run with their crosses. Let the players change pace, and at once the crosse, which seems to be an extension of the player's arm and body, reflects the influence of decreasing speed and the arc of the swinging crosse becomes wider and slower. At other moments, he will be impressed by the bounding leaps into the air, when with outstretched arms and lifted chest, the ball is coaxed into the swinging crosse. The memory of the leap will remain, as graceful as that of any dancer, but it is secondary in importance to the immediate objective of catching the ball. It was a means to an end but one not to be overlooked. Again, at the other end of the field an attacking player has broken loose, but a defending player neatly blocks her path without touching her, and with quick, constantly shifting foot rhythm, keeps between the attack and the goal, thereby preventing the player from making progress.*

The sudden changes of footwork involved would do credit to a tap dancer or the most agile Lindy Hopper. But wait! Our attack has an answer for this nuisance. She pulls out quickly to one side with a twisting movement of the torso and with a smooth shoulder movement she completes the protection of her crosse and speeds to the defense.

The thought goes through your mind that a dancer might make a good lacrosse player. It is true that similar comparisons could be made with other sports as the subject, but in this sport there is an opportunity that begs to be used. Many times today we tend to classify ourselves as dancers, athletes, or administrators, and aften miss rich opportunities to relate activities within our own field while we speculate upon correlation with other field. This is one instance in which the activity begs its skilled athletes to consider more closely the art of movement itself; while in a sister field, the dance students who must of necessity understand and love movement that is free, strong and vigorous, could occasionally share their preoccupation with movement and enrich both themselves and a sport. Many dance students are attracted in the first place by the notion that through the medium of dance they will enrich their knowledge of skills and become more efficient sports women. Then the undoubted fascination of the art takes their interest completely away from any sport form.

In college especially, where we want our students to have a well-rounded experience in physical education, more often than not we find that our dancers want to remain dancers and our athletes want to remain athletes without any "sissy stuff". It would be valuable to point out the contribution that the *good* dancer can make to a sport, and the equal gain to the athlete of effective body movement. Lacrosse appears to offer such an opportunity to the dancer for these reasons:

(1) A dancer likes free, vigorous movement that is rhythmical in its essence, and a continuous rhythm is the basis of lacrosse. Cradling, for instance, or the swing of the crosse containing the ball, is in definite rhythm with the footwork of the player. On a fast "run through," the range of the motion narrows, gathers intensity and even height. Let the runner decrease her pace, and the crosse will swing in a lazier curve with very moderate tension.

(2) The dancer understands the effect of speed upon the range of movement. This is useful since lacrosse is a sport where the rhythm of the implement and the player must at times be as one.

(3) In addition, she possesses coordination, balance, relaxation, endurance, flexibility, and an awareness of the way different parts of her body move; and as well as understanding the influence of speed and direction upon movement, she is aware of the force exerted. A great part of the game of lacrosse is already in her possession.

(4) Her locomotor ability is above average, and "long leaps through the air to catch a ball" or "jumps with complete extension" are at least understandable words in her vocabulary. With springy action in her knees and ankles, she will have no trouble with rapidly shifting foot patterns while body-checking an opponent; furthermore, her keen

* Note: This is called "body checking," rather a contradictory term, implying to the lay mind bodily contact, while on the contrary no body contact is allowed.

sense of body relationships should be an asset in sticking with her opponent. Movement that is sudden, staccato, and swerving has been her field.

(5) Pendular movement, twisting movement, high lateral rib leads, shoulder leads, hip leads, all fall into place in the teaching of catching, throwing and dodging. Here stiffness is fatal, as Katherine Lockley says, and if the cradle has become truly an extension of the arm and the movement is rhythmical, related to the running beat of the feet, your player will naturally catch well. When it comes to passing, an instrument that responds dutifully to the demands upon it to twist when needed and in rhythm, will be helpful. (At a secondary school, it was sheer fun to watch two students throw and catch to *Valse Triste* by Sibelius, twirling, varying their cradling with the changes in intensity in movement, throwing and catching definitely in relation to the beat, and using body movement that was thoroughly dance-like in quality.) Catching requires relaxed pendular movement and often uses high lateral rib leads. Some throwing involves strong torso movement with definite shoulder pulls. Certainly the contemporary dancer has something to start with in that she understands these movements and has some degree of skill in their use. Again, Miss Lockley advises the beginner to make good use of the "turning of the body"—seeing that the pass is made whilst running, the body movement is an essential part and will do most of the work.

It is interesting in reading the little red book written by Miss Newbold and Miss Lockley, *Lacrosse for Clubs and Schools,* to note how frequent are the references to a rhythmic pattern in relation to the beat of the feet, to footwork, and to conscious use of body movement when learning the game skills. Certainly Betty Lee Evans with her splendid body movement would be an inspiration to a dancer, and the quickly shifting feet of Agneta Powell would be her despair. One does not have to be a dancer to be a good lacrosse player. That is obvious. But it may be that there is some potential material being neglected in your situation. Since women's larcrosse is more and more becoming a game of skill, grace, and agility, stir out some dancers and challenge their motor skill with this problem. They might enjoy it!

HEALTH TODAY AND THE PREHISTORIC CURRICULUM*

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To preface my remarks I should like to propose two basic assumptions and to indicate one observation.

The first assumption I shall propose is as follows: I assume that all of you present are interested in promoting and realizing a better life for yourselves and for the majority of mankind; in short, I think that all of us, since we are teachers or are preparing to be teachers, are very much concerned with making this a better world in which to live as a direct result of our efforts, our labors, and our lives. As a second assumption, I believe whole-heartedly that collectively and individually, almost without exception, we may more nearly and more fully realize our objective of attaining this better life we are striving for if we possess a sound, vigorous and healthy body, than if we have to depend for our means of attainment upon a jelly fish exterior attached uncertainly to a tottering frame. The observation I would like to make relates to recorded fact. It is not a matter of judgment—not an assumption. The fact, clearly and simply stated, is as follows: people are dying today as never before of what doctors call degenerative diseases—heart disease, cancer, kidney disorders and the like.

Having made these two assumptions and noted this fact, let us turn back the curtain of time in order to compare our life today in certain basic aspects with what we can reconstruct of the prehistoric curriculum or life activities of man in his racial infancy. It is probably substantially correct to say that man's first course of study in his million year old existence was physical education. Man's first curriculum was an activity curriculum. That activity curriculum was probably a half million years old before it included speech and probably nine hundred and seventy thousand years old before it included reading or writing. Yet, during the whole million years, man was running for his life, climbing for his food, throwing things at his mate or dodging them; he was running, leaping, climbing, throwing, wrestling and fighting ages before he was cooking, sewing, speaking, reading, writing or figuring up his income taxes and rendering unto Caesar.

Roy Chapman Andrews, Curator of the American Museum of Natural History, indicates that the

* A chapel talk.

first man-like being known to archaeology was, according to modern conception, no beauty. He was active and, though perhaps dim-witted, was certainly aware of the desirability for self-preservation. He existed in the face of enormous odds. Ice age after ice age rolled down from the north and many of his contemporaries, including the saber-toothed tiger and the mastodon, perished as the ages rolled by and the ice rolled down and back.

A million years of lost history lies behind us—almost all a blank page save for the bones and scraps in the record book of archaeology. A million active years, years of strife and conflict, turmoil, famine, dying, beastiality, running and throwing and jumping and killing and being killed. Man could not bite or tear much with his type of tooth and jaw; he could not fight much with nail or fang—puny, unarmored, insignificant, dumb, untutored beast he was—and, yet, he reared up straighter and straigheter on his hind legs. He lost most of his fur and in the last few centuries he walked out of history books, which he himself has written, as the first sublime wonder of creation. But during all that long dim million years, those lost and silent years, man was fighting, struggling, battling with a hostile environment. There were no old age pensions, and social security had not been thought of. For, in the temperate zone at least, there was no old age, nor could security of any form be found. As a result, the weak, the ineffective, the corpulent and the sick were weeded out. Through ten thousand centuries nature tried man out and shaped him to live and to survive in a hostile world. As a result you and I are here today with the basic endowment to live robust and hardy lives. Racial heritage gave us bodies made for use, muscles, bones and joints shaped and fashioned by the selective action of the test of time for thousands upon thousands of generations. Here we are today with our wonderful physical mechanisms, hearts that beat without cessation, lungs that expand and contract ceaselessly from the cradle to the grave, blood that courses through multitudinous channels, kidneys, liver, 26,000 million individual living cells functioning harmoniously for the good of the whole. Our physical beings were shaped and formed and handed down to us after hundreds of centuries of testing in the furnaces of adversity and the necessities for activity.

But, activity of a vigorous and active nature is no longer a necessity. We ride in street cars, busses or automobiles, sit in easy chairs and even our presidents have been known to ride mechanical horses. We pay taxes to buy busses to take our children to school and bring them home, we turn our radios on and off by remote control, we phone to the grocer for food, mail an order for coal to be delivered to the automatic stokers in our basements, enjoy curb or delivery service for our drugs and sodas, play player pianos or victrolas, and ride up in escalators and down in elevators, And, as a paradox of paradoxes, we put health education and safety education into our school curricula while removing the necessity and frequently not even providing the opportunity for vigorous physical activity, the one and only developmental source of vitality, power and health.

Food, diet and perfect nutrition alone cannot give us health.

Sanitation, hygiene and preventive medicine act only as deterrents to disease.

Fresh air and sunshine will not build power and endurance.

The only primary essential for the development of positive health and power is activity. The one indispensable requisite for abundant strength and vitality is activity. An idle muscle wastes away and deteriorates. The body as a whole is likewise a mechanism which works better when used. To keep our internal organs in fine condition we must use the muscles of the body and create demands upon the organism. Man did not arise full blown from the lap of luxury, he arose as self-acknowledged master of the globe through struggle, adversity and hard muscular work. Since prehistoric times civilization has, at periodic intervals, become a prey to luxury and softness. Where now is Egypt and the mighty Pharaohs; where is Babylon, Persia, Greece and Rome?

It is perhaps significant that in Athens—that tiny republic which in a short span of a hundred years produced a golden and unrivaled age of art and literature, politics and philosophy—in Athens during that golden age the school curriculum consisted of two subjects—"music" and physical education or, as it was called then, "gymnastics." It is interesting to note in this connection the words credited to Socrates, as timely today as they were 2,400 years ago, "What a disgrace it is for a man to grow old without ever having seen the beauty and strength of which his body is capable."

If then we want to live richly, efficiently and effectively; if we do care whether our dreams come true, we will not neglect the welfare of our most tangible asset, our physical being. We will give it something challenging and stimulating to do every day.

I do not advocate a return to the hard necessities of prehistoric, primitive or pioneer life. I do suggest that our physical heritage is the result of ten thousand centuries in which activity was a paramount necessity for existence. And I further wish to raise the question as to whether we care to pass on that heritage, weakened and devitalized by neglect, or enriched and strengthened through intelligent use.

TEACHING GUIDE FOR CO-EDUCATIONAL ACTIVITIES IN PHYSICAL EDUCATION (Continued)*

AMERICAN COUNTRY DANCES

Historical Background

The elements of American country dances originated in the countries from whence came the people who settled and developed early America. Like these early settlers, the immigrant country dances were forced by the pressure of a new environment into various adaptations that ultimately produced that which is truly American. Country dances, like people, differ according to the community in which they were "brought up," but their fundamental movements are the same.

American country dances are predominantly of three types: the square dances, many of which are quadrilles; the contra dances, the stereotype of which is the Virginia Reel; and the round dances, the product of some elements of each of the former with the addition of movement about the floor by couples.

Aims and Objectives

Sufficient familiarity with the various types of American country dances should be developed to enjoy dancing them. We should enjoy the spirit which they engender and appreciate their place in the social and cultural development of this country.

Objectives for the first semester:

1. To develop the proper attitude for participation in a group of boys and girls.
2. To develop the proper group attitude and group response necessary for a coeducation class of this kind.
3. To teach the more simple figures of the "Grand March" as well as to develop student leaders for it.
4. To teach the formation and more simple figures of the square and contra dance.

Objectives for the second semester:

1. To apply the appropriate calls and figures of the square and contra dances to the round dance.
2. To teach a number of the American country dances selected from the three types.
3. To devise means of more nearly approaching the stated aim.

Class Organization

The success of co-educational classes depends to a great degree upon preliminary planning and the cooperation of all the staff of both boys' and girls' physical education departments. Usually an adjustment of both programs is necessary in order to facilitate the co-educational work.

The following factors insure success for the class:

1. A definite time schedule for the program; i.e. a certain number of weeks in the block system or a certain day in the weekly program.
2. Classes to be conducted in a gymnasium or large room with musical accompaniment, piano preferred.
3. Class activity to begin the third week of the semester, thus allowing for adequate school organization and pupil conditioning.
4. Classes to consist of an equal number of boys and girls of the same grade or ability.

It is desirable to conduct some other type of co-educational activity, such as games, as an alternate (see co-educational games). The two groups may be exchanged every quarter. This also allows for adjustment in case of an unequal number of boys and girls; it is easier to conduct a class in games than a dancing class when the groups are unequal.

Note: Because the aim of this activity is socialization of the participants it is desirable to include students from corrective classes in this part of the regular program, with the exception of those who are not permitted any vigorous activity.

Teaching Procedures

A wise procedure to use for a beginning co-educational class is to proceed from the simple to the more complex activity. If this principle is followed, many errors which are always embarrassing may be eliminated.

The grand march is a good "starter" for a beginning class, because of its simple figures and because the group follows the leader. It is advisable for the teacher to lead the class until familiarity with the figure is gained. Marching by couples is usually the first step in getting students accustomed to a mixed (boy and girl) situation. At first boys and girls are reluctant to take any position which involves personal contact. It is wise to use the

* This is the second of three articles to be carried in THE PHYSICAL EDUCATOR. This material was obtained from the Division of Instruction and Curriculum through the cooperation of Mr. Martin H. Trieb. This material was published in 1941 and is being used as a teaching guide in the Junior and Senior High Schools of Los Angeles. The third and last article will appear in the February issue.

following positions: hand-in-hand position, the arm-in-arm position, and the skater's position. Eventually, the children will take any dancing position, if asked to do so, without embarrassment.

The square dance set can be readily formed from a column of fours or a column of eights with each rank made up of alternate boys and girls. By calling the first two couples out and placing the next two couples as the "side couples," it is easy to demonstrate the formation of the set to the entire group. From this point on it is only necessary to name them "first four," "head couples," or "side couples" and point out the place where the set should be formed.

Learning takes place more quickly when the class can see a correct demonstration of each figure; first, as a whole; next, in parts with explanations; then, as a whole again. One set should be trained as a demonstration group. The few minutes spent with this group before or after the period, or at some other time of the day, will more than offset the many minutes spent in class teaching without a good demonstration.

The figures taught first should be those in which all the members of the set take part simulaneously, e.g., "eight hands round," "all forward, back and swing partners" or "grand right and left." After the fun of all participating has been felt, those figures involving only two couples and those in which one couple progresses around the set are taught with greater success.

After the class is thoroughly familiar with certain calls and figures of the square dance, it is a simple matter to change the formation to that of the contra dance. Two square dance sets combined, or eight couples, is a good sized group for contra dancing. To form the round set from either the square or contra dance set is merely a matter of marching with partners as one couple leads the group into a circle of couples. Forming two or three circles gives a better social setting and feeling.

It should be noted that no dances are recommended as teaching material. The reason for this is understandable. Too often misconception arises that country dancing is made up of a certain routine of figures done to a specific piece of music, country dancing needs a greater feeling of spontaneity than that. The real fun of country dancing springs from the playful spirit of competition between the caller and the dancers with the musician setting the time to keep both within bounds. The many specific dances that have been passed down to us come as a heritage—the result of tradition. They are specific because the figures are rhythmically fitted to the music or because each figure leads easily into the next. Even these so-called specific dances, called by name all over the country, vary slightly in different communities.

After the fundamental figures have been learned it takes little additional learning to master any of the popular country dances.

Teaching Suggestions

Avoid as much as possible using the word "dancing" because poor choice of material, poor teaching procedures, and poor teacher attitude seem to have given the students the wrong impression of the term. Instead use the term "co-educational activities." The students will find out that it is fun before developing a distaste for it because of its name.

Accept a certain amount of reluctance to mix together as a natural attitude. Plan so the fun of the class will change that attitude.

Teach for a miximum of enjoyment with a minimum of noise by pointing out that anyone who fails to hear the call will miss the figure. In other words, to have them listen is better than to make them hear.

Avoid situations that may cause individual embarrassment. Later some groups, or even some individuals, may be able to accept graciously some remark about going the wrong direction or missing the figure.

Use visual aids to assist oral explanations, such as, writing the calls on the blackboard or having a group demonstrate the figures.

Choose materials that call for vigorous action rather than skill.

Analyze figures before the teaching period in order to be able to give detailed descriptions of them in terms understandable to students. Know the counts necessary for each part as well as for the whole figure. Let the class work by count in the first learning period but emphasize a rhythm-consciousness rather than a count-consciousness.

It is desirable that men do the actual class teaching so as to give it a masculine touch. Women may assist in the selection of material, musical accompaniment, helping individuals, and demonstrating positions. Women teachers should remember that the expectancy level for dancing in co-educational classes is much lower than that for girls' classes.

Rehearse each "call" thoroughly with the music in order to time it correctly for the class. In a series of calls, the call for each figure should come at the end of the preceding musical phrase in order that the class may start that figure with the new phrase.

Consult the library for descriptive material. Work it out with the help of your colleagues. Observe and talk to groups who still do country dancing as a means of recreation. If you are interested and can tell interesting anecdotes, you are able to teach in an interesting manner.

MATERIAL TO BE TAUGHT

Formations with Descriptions

1. *Square Dance Formation*

   Made up of four couples, each standing as a side of a hollow square. The couples are faced inward with the girl on the right of the boy. The couple nearest the music is designated as the head or first couple, the couple to the right of the head couple is the second couple, the couple opposite the head couple is the third couple, the couple to the left of the head couple is the fourth couple. The first and third couples are called the "first four" or "head couples." The second and fourth couples are called the "side couples."

2. *Contra Dance Formation*

   Usually made up of six or eight couples standing in two lines, the boys in one line facing the girls in the other. The couple nearest the music is usually the head couple, the couple at the other end is the foot couple, the other couples are numbered consecutively from the head to the foot. A variation of this formation is to have every other couple with the boys on the right and the girls on the left. The odd couples may be designated as active couples, the others as passive, and after "casting off" the passive become active and vice-versa.

   When the first, fourth, and seventh couples are designated as the active couples certain couples are always inactive until the next "cast off."

3. *Round Dance Formation*

   Made up of a circle of couples, of threes, or of double couples with the first, third, and every other couple faced about. The girl is on the right of her partner.

4. *Circle Formation*

   A single circle made up of boys and girls placed alternately. The boy's partner is on his right as all face inward. Sometimes one extra boy is placed in the center of the circle.

The Step and Possible Variations

The step used in American country dancing is difficult to describe but easy to do. It is a swaggering, lilting walk with the slight suggestion of a strut-step one would do while walking in time to such music as "Turkey in the Straw" or the "Irish Washerwoman." The figures are done with this type of step. However, skip steps, gallops, or sliding steps make an interesting variation and give more action to the figures.

Figures of the Grand March

1. March in file; simple case of "follow the leader" with the boys following the boy leader and the girls following the girl leader.
2. March in a single file, girls in one line, boys in the other. Partners unite and march side by side as all follow the head couple through various figures such as:
   a. Long serpentine (or snake). All follow the head couple as they counter-march at the ends of the hall, so that the column doubles back upon itself. The head couple keeps counter-marching, first left, then right, and so on alternately.
   b. Short serpentine (or snake). Similar to the above except done across the hall.
   c. Snail. Head couple leads the column in a large circle, passing the foot couple and gradually spiralling inward toward the center. At the center the head couple counter-marches and leads the group in a spiral outward, passing between the rest of the incoming column.
   d. Arches. The head couple stop, partners face each other and join hands. Each couple passes under the arch made by the head couple and helps form or build an arbor. The head couple follows the foot-couple through and continues about the hall followed by all couples as they come through the arbor.
3. March in a column of fours (double couples). The column of couples form a column of fours as follows: the couples come up the center of the hall; at the head of the hall, the head couple turns to the left, the second couple turns to the right and the rest alternate in the same manner, thereby going down the sides of the room in columns of couples. These columns unite side by side as they come up the center. (This is a good way in which to make possible the designation of the first four and the side couples.)

   A column of eights or sixteens can be formed in the same manner.

   Some of the marching figures done by a column of couples can also be done by the column of fours, but are more difficult.

Common Calls and Figures of the Square Dance

1. In which all dance
   a. "Eight hand 'round"
      All join hands and circle to the left for eight or sixteen counts, either walking, sliding, galloping, or skipping.
   b. "Forward, back and swing partners"
      All move forward to the center with three walking steps, starting left and bring the right toe to the left heel on

the fourth count. All move backward to place starting with the right foot and bring the left toe to the heel on the eighth count.

All face partners and swing each other by joining right hands and walking about each other for eight counts; by locking right elbows and turn each other; or by taking the dancing position, with the girl kept slightly to the right, and doing a "buzz step" around each other. In the "buzz step" the weight is on the right foot but shifts momentarily to the ball of the left foot on the "and" count. The right foot steps forward a very short step as the left foot takes the weight.

c. "Forward, back and swing corners"
Repeat as above except each swings the girl on his left.

d. "Promenade all"
Each boy escorts his partner counter-clockwise around the square. The girl may take the boy's offered arm, or the more stately position of holding the inner hands high may be taken or the "skater's position" with the boy's right arm over the girl's left arm.

e. "Ladies (or gents) to center with the right hands cross"
Each girl joins right hands with the girl opposite. The girls of the first four join their hands across those of the side couples in a "mill-wheel" position. In this position the girls circle clock-wise in eight counts. "Left hands back": with the left hands joined the girls move counter-clockwise for eight counts.

f. "Ladies Grand Chain"
Girls take the "mill-wheel" position described above and make a half circle clockwise in four counts. There the opposite boy takes the girl's left hand in his left, puts his right arm about the girl's waist and turns her about him (left) in four counts. The girls go back to place in the same manner in eight counts.

g. "Grand Right and Left"
Partners face, join right hands and pass each other giving left hands to the next one, and so on about the set. Each passing takes four counts, the whole figure takes thirty-two, the girls go clockwise, the boys counter-clockwise.

2. In which the first four (couples one and three) dance

a. "Four hands 'round"
As in "eight hands 'round" except the four concerned advance and make a small circle in the center of the set. The figure takes eight counts.

b. "Forward, back and swing partners"
Done by the couples designated in the manner described previously.

c. "Forward, back and swing corners"
As above, but "swing corners" which involves all persons in the set.

d. "Promenade"
Similar to "promenade all" except the couples concerned promenade around each other inside the set.

e. "Ladies' chain"
The two girls concerned pass by each other in the center of the set giving right hands. The rest is done as in the "Ladies' grand chain."

f. "Right and Left"
The four concerned pass through their opposites, boys on outside and then trade places with their partners giving left hands and return to place in the same manner. This figure, as do the other figures of four, takes sixteen counts.

Note: The caller must designate whether the head couples or the side couples perform the figure, e. g., *"Head couples,* ladies chain" or *"Side couples,* right and left."

Figures for four may also be done by having the first couple lead to the couple on the right, then to the third couple, to the fourth couple, and back to place. In the latter call a grand figure is given instead of the figure for four. Each couple in turn may be called out to make the round.

Common Calls and Figures of the Contra Dance

1. "Active couples"

a. "Down the center and back"
The active couple join hands and slide or gallop down the middle of the set for eight counts and back to place in eight counts.

b. "Down the outside and back"
Each active person steps back and slides or gallops down the outside of the set and back in sixteen counts.

c. "Balance and swing partners"
Active couples swing in the middle of the set. The "balance" has been omitted for the most part but is done as follows: Partners face each other, step right sideward with the right foot, point the toe of the left in front of the right; step back in place with the left foot and point toe of right foot in front of left.

d. "Dos a Dos" (back to back)
Partners forward, pass to the left of each other, go one step past, pass around each other back to back, and backward to place.

2. "Active couples with the couple below"

a. "Four hands 'round"
As described previously in the square dance figures.

b. "Cross right hands once around"
See I.e. of the square figures.

c. "Right and left"
See square dance figures.

d. "Cast off"
Means to go below one person and is usually done after "down the center and back." Active person places arm about the waist of the one below and they change places with a half circle left, both drop arms and turn about to face their opposites. Casting off takes just two counts; the rest of the music is usually made up of "right and left." The passive couples are now active although when every third couple is declared active, they remain active for two times through the routine of figures, casting off to get a new "couple below" at the end of each routine
Note: When the active couples are crossed over in the contra dance set, any of the "figures for four" of the square dance can be done.

Calls and Figures of the Round Dance

Any of the "figures for four" of square dancing can be done. Couples usually progress to new combinations of couples by the call, "Forward, back and cross over." The "cross-over" is done by passing through the opposite couple.
The round dance may end with couple dancing, usually the two-step, polka, schottische, or waltz.

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SUGGESTED DANCES

Square Dances

1. "John Brown." A circle dances with an extra boy. *American Country Dances*, Burchenal.
2. "Head Two Gents Cross Over." Very simple and a good mixer. *Dances of Our Pioneers*, Ryan.
3. "Arkansas Traveler." A fairly easy square dance. *Dances of Our Pioneers*, Ryan.

Contra Dances

1. "Virginia Reel." Simple and easy with many variations. *Country Dance Book*, Tolman and Page.
Dances of Our Pioneers, Ryan.
American Country Dances, Burchenal.
2. "Devil's Dream." Simple and active.
Same references as No. 1.
3. "Fisher's Hornpipe." Very simple.
Same references as No. 1.

Round Dances

1. "Sicilian Circle." A favorite round dance.
Country Dance Book, Tolman and Page.
Dances of Our Pioneers, Ryan.
American Country Dances, Burchenal.
2. "The Merry Haymakers." An active round, not too complicated. *American Country Dances*, Burchenal.
3. "Downeast Breakdown." A simple round for couples in a circle. *Country Dance Book*, Tolman and Page.

PHYSICAL EDUCATION IN THE DEMOCRATIC PROCESS

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What Is Democracy?

The concept of democracy has had to change since the days of the frontier. Communities then were few and far between. Problems which arose were largely individual problems and were best settled by the individual. In what communities there were, life was more integrated and homogeneous then than now. We did not have the diversity of occupations; each had about the same amount of this world's goods; conflicts between groups did not arise. People also had just come through a struggle for independence; a struggle to free the individual from oppression. It is not to be wondered at, then, that democracy came to mean the freedom of the individual.

Now, however, we live in an age of technocracy. People live in congested areas; the scale of living has been changed so as to cover a wide range from poverty to luxury. Immigration has brought in a large variety of cultural patterns; life has had to become a community affair.

Democracy, therefore, has changed from being largely a matter of individual freedom to being largely a matter of community or group freedom. Until we accept this as a primary thesis, we cannot educate for democracy.

This does not mean that democracy does not consider the individual. "Life, liberty, and the pursuit of happiness" for each individual still holds good but only to the extent that it is not obtained at the expense of the group. We can obtain democracy only by developing in the individual the innate understanding of the words "responsibility" and "self-sacrifice," and by abolishing religious, racial and social prejudices.

Need of Educating for Democracy

As long as America could remain an isolated country, far removed from other cultures and a nation largely agricultural in occupation, there was little need of teaching for democracy. Democracy was the accepted form of government and each new generation accepted it without question.

This is no longer true. America is much closer now to the European continent than England was in the day of sailing vessels. We can no longer remain an isolationist country. Those who claim we can are simply ostriches burying their heads in the sand. Inventions have brought countries too close. The newest transatlantic plane has brought the time of travel to Europe down to an unbelievably few hours. With each new transatlantic plane more and more tonnage is kept up in the air which means transportation of heavier cargoes. Heavy bombers now can carry seventy tons, travel a distance of 6,000 miles and return to their bases. Each new ship built cuts down the transatlantic time a little. Such inventions are bringing nations much closer physically.

Another invention which has brought us much closer than any of the above is the radio. This reaches into the homes of almost every American family. Short wave lets one listen to the programs of any country. Propaganda is hard to analyze; a Lord Haw-Haw can have a powerful influence on people not taught to recognize propaganda. This means that not only must we consider the opponents of democracy in America, but we must consider them in the light of the influence exerted on them by foreign governments. All the "isms" of other countries are trying to further their cause in the United States. Our only defense against them is to educate the American people to analyze both the "ism" and the propaganda.

A broad education is essential if American democracy is to work well in face of the complex problems of today. No government can stand if it fails to give a certain degree of economic security to the masses. Yet, even with the defense boom, we still have millions out of work, many of them the youth of today. Youth is more apt to question existing conditions than the old who tend to dislike change. Youth is eager for new ideas and in its present uncertainty is ripe for propaganda. Because of the unrest brought about by this social insecurity, which is definitely undermining our democracy, there is a greater need today than ever before to teach democracy.

How to Teach for Democracy

There is no form of government which is harder to teach for than Democracy. It is the only form in which thinking is encouraged. To indoctrinate is easy, if begun soon enough in life or if thrust upon the ignorant. Totalitarian governments do this. It is the same process of education that Huxley demonstrates in "This Brave, New World." In this book where life is reproduced in test tubes, protoplasm is grouped according to its future purpose in life. Then a voice repeats over and over

words indicating that purpose for a particular group as "I am a worker. My place in life is a worker. I am happy to be a worker. I am a worker. My place in life is a worker. I am happy to be a worker," or words to that effect, over and over until the child is born so indoctrinated with that idea that he never questions his position in the scheme of things. Totalitarian governments do just this. They begin indoctrination in their schools from the child's first day there and produce followers, not thinkers. This works beautifully until some one, as in "This Brave, New World" has received the wrong treatment in the laboratory and emerges with a questioning mind. Such a one may be able to transfer the blind followers to his train; so indoctrination is not sound education though we might get quicker results.

Another duty of the school is to give an unbiased presentation of all forms of governments, if we are to have freedom of thought, speech, and religious beliefs; and individual liberty and group freedom, of course kept within the law. But we must especially emphasize democracy.

Each phase of the school program has its contributions to make toward a better understanding of the meaning and values of democracy. The social studies can discuss the whole problem of social security. The arts can contribute much to understanding of contemporary life and racial cultures. But physical education is in a rather unique position in regard to teaching for democracy.

Nothing is really learned unless we have resulting modified behavior. This means putting democratic theories into practice in the schools, not just lecturing about them. Physical education, because of its group games and personal contacts, offers a large opportunity for practice in many of the cultural patterns which are necessary for democratic living.

Physical Education and the Democratic Process

One of the fundamental bases of democracy is the interplay between the rights of the individual and the group. Nowhere can education get this lesson across as well as in the team games. Here each person, while having his own position and plays, must submerge them for the good of the team. The instant he becomes too individualistic, that instant the team fails to function as successfully as before. The player finds that his success is wrapped up in the success of the group. Through team spirit he gets a feeling of responsibility in and for the group. That is an important item in democracy.

Wrapped up in the above is also the lesson of self-sacrifice for the welfare of the group. A player who would like to do the basket shooting himself will feed the ball to another player if that player is the better goal shooter or is in a more strategic position for the play.

There can be no slackers or slouchers if the group is to win. There must be complete unanimity of purpose. The members of the team can't be at loggerheads with each other, as capital and labor are today, unwilling to wait for compromise through mediation, and expect a successful season. Anyone at cross purposes with the other members would be such a menace to the success of the team that he would be dropped from it no matter how good a player he might be. He must learn to cooperate and "play ball" with the members of his group. He learns to share responsibility for a worthwhile end.

No place else do we have such an opportunity for teaching class tolerance. Color and ranking disappear on the playground. A colored boy who plays better or runs faster than a white boy will be chosen first for a team. As races know each other better through the informality of these games, prejudices tend to disappear.

Physical education can teach followership and leadership as no other curricular activity can. No other school subject has so many opportunities to place a child in the position to practice both.

The spirit of fair play is another fundamental basis of democracy. If exercised broadly it can mean much more than obeying the rules of the game. It will mean giving the other fellow a chance and not taking an unfair advantage.

In games the majority rules; the minority has the right of expression in order to sway a group its way, but when it comes to the final choice of games or a line formation, the majority rules.

Self-control and self-discipline are fundamentals of team games as well as a democracy. A person who lets his emotions get the upper hand finds that his judgments and coordinations are not so fine as before. He can no longer play his best, he can no longer judge the situation accurately. He interferes with the welfare of the team even to such an extent that he is jerked from the game. He comes to recognize the need of self-control. In addition to the self-discipline indicated in self-control, he also learns the self-discipline of drives and desires. He has a rigid set of training rules to observe. Late hours, eating any food he wishes, are not for the man on the team.

The person participating in games learns to extract achievement from defeat. He learns to lose gracefully; it may be defeat has taught him the need of self-control. There are many lessons he can learn from being the loser.

There are other learnings involved, which are necessary to the democratic way of living, to which

Continued on page 95

BOOK ANNOUNCEMENTS

THE ADMINISTRATION OF HIGH SCHOOL ATHLETICS. Charles Forsythe. (New York: Prentice-Hall, Inc., 1939) 413 pages, $2.00.

An excellent book for the purpose set forth in its title. Every problem and several possible solutions to these problems met in high school athletic administration is included. The author is well qualified and has produced a very worthwhile treatise.

DANCE: A BASIC EDUCATIONAL TECHNIQUE. Edited by Frederick Rand Rogers, Ph.D. (New York: The Macmillan Company, 1941) 351 pages, $3.75.

A symposium on the dance to which many leading exponents of the Modern Dance—Chalif, Chellis, Eliot, Graham, Holm, Humphrey, Martin, St. Denis, Shawn, Starks, and others—have generously contributed. In true Rogerian style the early chapters develop the thesis that "appreciation of the truth that most teaching must be indoctrination is essential to the continued integrity of education." Dance in this case is the medium to indoctrinate. Thus the editor continues that "physical activity is the basis of intellectuality itself," and that "large-muscle activity dominates behavior from birth to death," therefore the dance is *the* activity for that all-round development. Many of the statements have a familiar ring to them, in fact they are the same ones that have been used for the promotion of the entire physical education program, and are now transposed to promote the dance.

DANCE: A CREATIVE ART EXPERIENCE. Margaret N. H'Doubler. (New York: F. S. Crofts and Company, Inc., 1940) 200 pages, $2.50.

A beautifully written answer to the question often asked, Why all the furore about *dance?*, by an exponent of the *dance*. "As long as man is responsive to the forces of life and the universe, there will be dances." Dance releases energies, gives opportunity to be creative, frees the personality, and develops love of the beautiful, says the author. The finale is a twenty-six page annotated bibliography.

DEMOCRACY AND SPORTS. John R. Tunis. (New York: A. S. Barnes and Company, 1941) 52 pages, $0.75.

". . . Democracy is a conception of *means* and not of *ends*." "Sport is a game or some form of physical exercise done for the fun of it. Because it gives you pleasure. Sport of this type is obviously democratic as it is obviously workable, congenial and just." A thrilling discussion of the essence of true sport, by a leading sports writer who decries commercialism, over-emphasis, "and sundry forms of athletic exhibitionism." True democracy is exemplified in sports. One not professionally trained in physical education or athletics points the way and emphasizes the ideals toward which *real* physical education and athletics have long since headed. Every layman can understand this and because Tunis says so it bears much more weight than the same preachments coming from within the profession.

DOCTORS DON'T BELIEVE IT—WHY SHOULD YOU? August A. Thomen, M.D. (New York: Simon and Schuster, 1941) 384 pages, $2.50.

This handy guide should be on every last individual's reference shelf. Specific questions asked by numerous laymen are answered catechetically by a physician so that every last individual may easily understand the answer, and thus dispel fallacies often considered facts.

EFFECTIVE LIVING. C. E. Turner and Elizabeth McHose. (St. Louis: C. V. Mosby Company, 1941) 432 pages, $1.90.

A series of units around the central theme, effective living, for the individual, the family, and the community, designed for secondary school health education. Each unit is followed by a self-check, and a number of problems and activities. It is a clear, concise, and sound book; yet not too technical, and definitely not "talking down" to the student for whom it is intended.

FREE LEARNING. Elizabeth B. Cowley, Ph.D. (Boston: Bruce Humphries, Inc., 1941) 334 pages, $3.00.

A compilation of legislative action and reports regarding free learning (public schools) in representative types of states: Massachusetts, "birth of tax-supported schools"; Pennsylvania, "stronghold of colonial pauper and denominational schools"; Michigan, "western and post-colonial schools"; and California, "the far west" from 1830 to the present day. This book gives a new slant on the history of free learning and should make a helpful collateral text in history of education.

GAMES THE WORLD AROUND. Sarah E. Hunt and Ethel Cain. (New York: A. S. Barnes and Company, 1941) 268 pages, $2.50.

"Folk games are traditional patterns of group behavior that have come through the ages," and are compiled here for use by grade teachers in conjunction with the integrated curriculum in the elementary schools. Though it might be considered another game book, the treatment of the material makes it a handy reference for all teachers.

LABORATORY MANUAL FOR TESTS AND MEASUREMENTS IN HEALTH AND PHYSICAL EDUCATION. C. H. McCloy and Aileen Carpenter. (New York: F. S. Crofts and Company, 1941) 140 pages, $1.25.

A manual to be used with the senior author's splendid textbook on tests and measurements. It may also be used as a guide for such a course. It should prove a helpful adjunct to the textbook in course work.

LIFE AND GROWTH. Alice V. Keliher. (New York: D. Appleton-Century Company, 1941) 245 pages, $2.00.

A Progressive Education Association publication of the Committee on Human Relations, this volume "represents an honest attempt to answer the many questions asked by young people" about life and growing up. The introduction "Am I Normal?" gives an excellent start. The material is divided into three parts: Human Life and Social Progress; The Individual and the Way He Grows; and New Life and Social Change. This book is a most up-to-date presentation of sex eudcation in plain, simple, and understandable terms for high school students.

THE MIND'S EYE. Ernest Cobb, Bertha B. Cobb, and Madeline W. Cobb. (New York: G. P. Putnam's Sons, 1941) 254 pages.

"All true education is attained through mental pictures . . . which become the basis of our conscious lives . . ., the very essence of life itself." The nature and function of mental pictures in the educative process is explained for those now teaching or preparing to teach.

THE MODERN TEACHER OF PHYSICAL EDUCATION. Gertrude M. Baker. (New York: F. S. Crofts and Company, 1940) 264 pages, $2.00.

". . . is the teacher whose professional horizon is continually being shaped in the light of the finest educational truth of the day that will fashion a physical education." Basic philosophy, curriculum, methods, and their evaluation is clearly presented for the teacher in-service, and for the prospective teacher so that "better teachers and administrators, richer environments and higher standards for both will . . . bring finer interpretation of content." The need for and the method of modern aspects of lesson planning is thoroughly covered and will be very helpful for the teacher-to-be.

OFFICIAL FOOTBALL GUIDE, 1941. Edited by Walter R. Okeson. (New York: A. S. Barnes and Company, 1941) 306 pages, $0.50.

The annual football guide and records of the 1940 season, current schedules for 1941, and the new rules has just come from the press. It is no longer published by the American Sports Publishing Company after many long years of faithful service. The rules section is again part of the regular binding of the guide and non-detachable. The make-up is somewhat improved, and the contents seem not to be so compressed together. The non-detachable rules section seems to be a backward step. Is it an expedient one?

OUR EDUCATION RACKET. Francis D. Waterhouse, Ph.D. (Boston: The Meador Publishing Company, 1941) 376 pages, $2.00.

Sub-titled "An Inquiry into the Fallacies of Our Education Philosophy" the author criticizes in a prolix manner present day college education, pointing out many of the faults which college faculties are attempting to overcome. Among other things he decries the over-emphasis on extracurricular activities, and especially athletics. Little in the way of constructive suggestions appear except a plea for more men teachers, a more standardized examination routine, and the development of a will to study or work among students and college instructors. Most of the 376 pages could easily have been condensed into about one-quarter of the space.

PERSONAL HYGIENE APPLIED. (Seventh Edition.) Jesse Feiring Williams, M.D. (Philadelphia: W. B. Saunder Company, 1941) 529 pages, $2.50.

This edition presents a number of substantial changes, additions, and deletions. It is a thorough revision from the defense and place of hygiene in the curriculum to the accepted requirement as a necessary part. Up-to-the-minute photographs and arrangements are a welcome addition to many parts, but their adequate explanations of diagrams (as usual, from other publications) is still a definite handicap.

START TODAY! Your Guide to Physical Fitness. C. Ward Crampton, M.D. (New York: A. S. Barnes and Company, 1941) 224 pages, $1.00.

"We Americans think we are fit. We are not. We are as far behind in physical fitness as in tanks and aeroplanes." In order to combat this the author has prescribed seven exercises with variations and a dietary regimen to make us fit. A personal check-up chart for self-evaluation of our own *status quo* is also included so that we may "Start Today!"

STUDENT TEACHING IN PHYSICAL EDUCATION. Germaine G. Guiot, Ed.D. (New York: A. S. Barnes and Company, 1941) 84 pages, $1.00.

The guiding principles of supervision for student teachers with particular reference to physical education specialists is given as, the student conference, observation and participation, instructional planning, and evaluation. In developing each of these principles an excellent guide has been prepared. It should be an invaluable aid for "practice teaching" critics and interneship supervisors.

SUCCESSFUL TEACHING IN PHYSICAL EDUCATION. Elwood C. Davis and John D. Lawther. (New York: Prentice-Hall, Inc., 1941) 665 pages, $2.50.

"Teaching includes all forces, processes, and factors related to the teaching situation." To be a "successful teacher," then, one would need to comprehend these "forces, processes, and factors." Thus the authors have set out to cover the forces, processes, and factors in one all-inclusive volume, and have made a splendid contribution to serve as a guide for beginning teachers, and experienced teachers as well; also as a check list and self-analysis for experienced teachers; and a sourcebook for graduate students.

TEETH, HEALTH, AND APPEARANCE. Lon W. Morrey, D.D.S. (Chicago: Bureau of Public Relations, American Dental Association, 1940) 48 pages, $1.50.

The approach to the care of the teeth as presented by the American Dental Association, with numerous before and after photographs of actual appearances. Diagrams in color with careful, adequate explanation make this a valuable book for teacher, pupil, parent, and dentist.

TEXTBOOK OF PHYSIOLOGY. (Seventh Edition.) William D. Zoethout and W. W. Tuttle. (St. Louis: The C. V. Mosby Company, 1941) 743 pages, $4.50.

A logical, precise, and scholarly presentation of the general field of human physiology. The splendid outline of material makes it easier for the student to determine topics of equal importance, sub-topics, and the discussion pertinent to each. While technically sound, it is not too technical for colleges without laboratory facilities. It seems to be one of the best textbooks on physiology that has appeared recently.

TOUGHEN UP, AMERICA! Victor Heiser, M.D. (New York: Whittlesey House, McGraw-Hill Book Company, 1941) 228, pages, $2.00.

Are we pressing too much our "margin of fatigue"? "Our physical fitness . . . is the first requisite of a tough and stable spirit." A medical man of wide repute has outlined the "ABC's of proper eating" and has recited a number of "half truths . . . (that) justify our laziness," in the toughening up process which the present draft examinations are finding among our men. It is a plea for Americans to "toughen up!"

WORKBOOK FOR PHYSICAL EDUCATION. Mae Iddins. (St. Louis: C. V. Mosby and Company, 1941) 144 pages, $1.50.

". . . a brief introduction to the various sports and to provide a challenge to them (women) to continue their study of the sports in which they are particularly interested." There are forty-nine units in the various activities starting with a self-inventory, and including team sports, individual activities, games of low organization, and other teaching material.

PHYSICAL EDUCATION IN THE DEMOCRATIC PROCESS

(Continued from page 92)

physical education can contribute, but those given illustrate the place of physical education in the democratic process.

Though physical education has these contributions to make, physical educators are too prone to think that these qualities lie inherent in the game; that all one has to do is play and these qualities are miraculously acquired. This is a faulty assumption. The physical educator must grasp every opportunity, even make them, to teach specifically for any learning he wishes the child to acquire. He must go further than this if he wishes modified behavior. He must broaden those experiences by getting the broadest associations possible for the child. Too often we have fair play on the playground and cheating in the class room. To often we have self-sacrifice for the welfare of the group in a game and "let the devil take the hindmost" in the business world.

Physical education has a significant part to play in educating for democracy. But those learnings must be acquired, not only as modified behavior on the playground but they must also be given direct association with democratic living. Only as physical education brings about this association can it have its place in the democratic process.